

HEALTH
AND HEALTH RESORTS
WILSON.

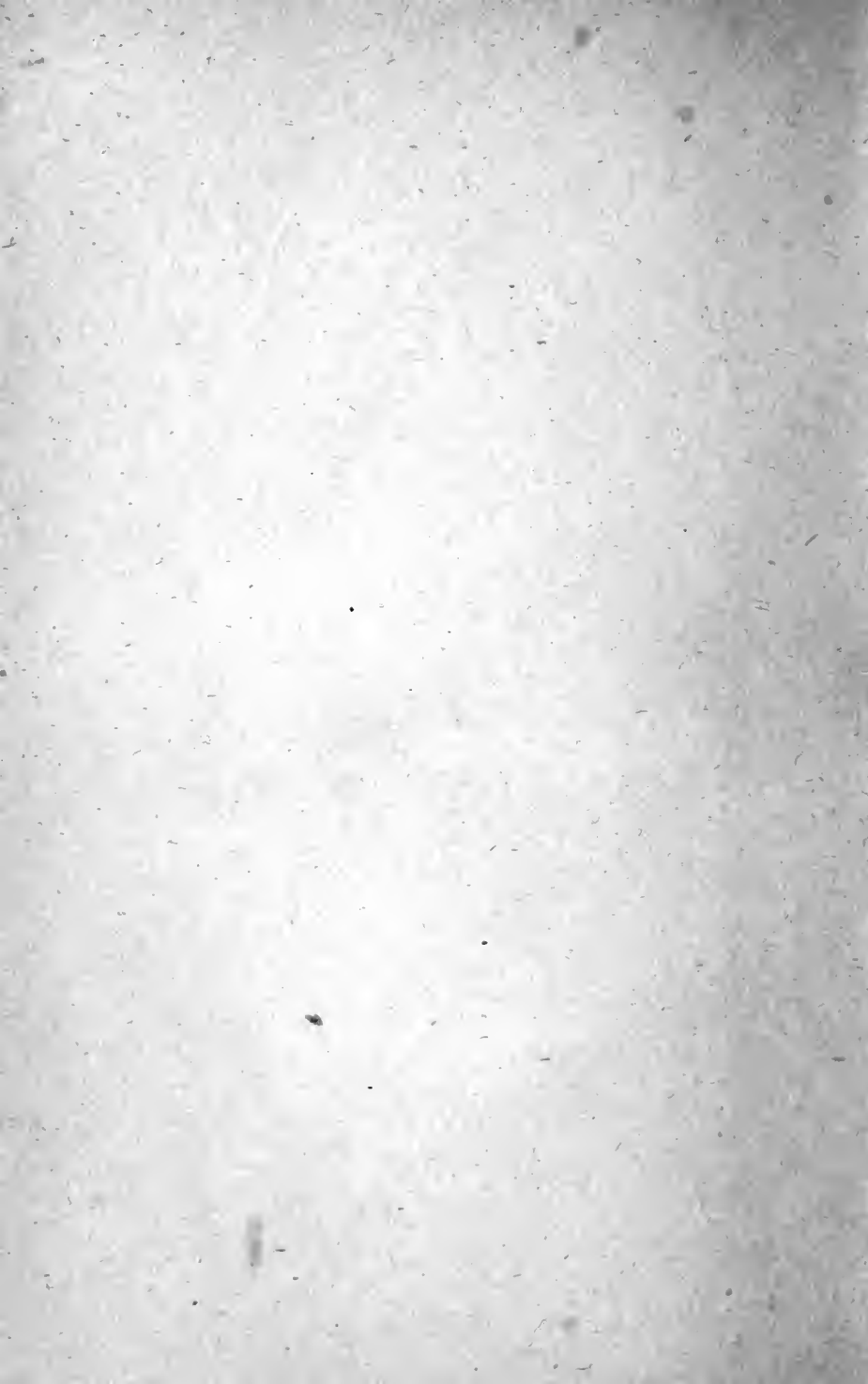




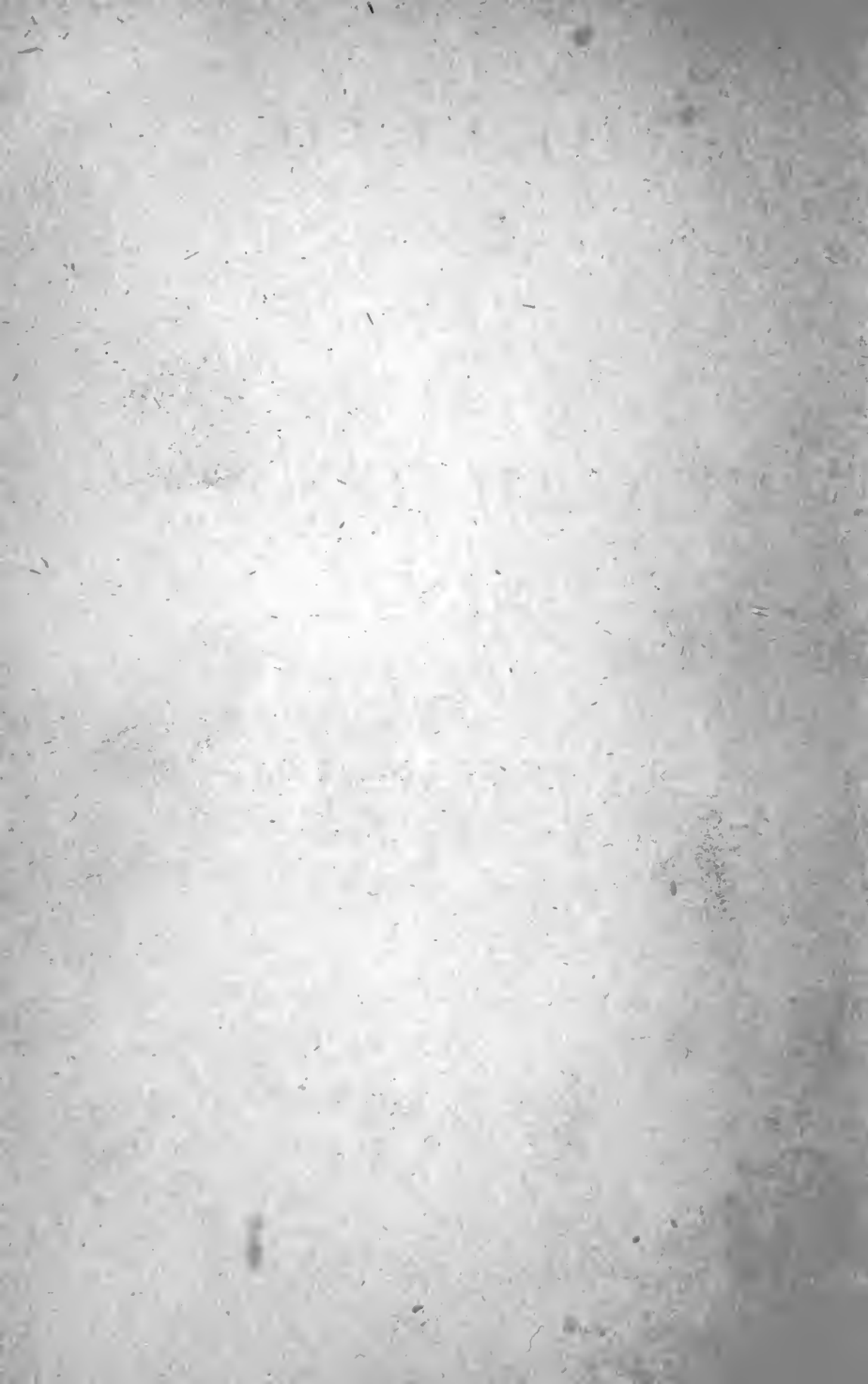
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INTRODUCTORY REMARKS.

THE large and constantly-increasing number of invalids who annually quit their homes to visit foreign health resorts in the hope of recovering lost health, and the sad and disappointing experiences I have witnessed amongst this class in a foreign land, have induced me to offer to the public in this volume some such practical observations upon the subject of health and the merits of these health stations as, it is hoped, may lead the curable invalid to a just appreciation of the natural resources of which he should avail himself, and at the same time deter the fatally sick from making injudicious and unavailing experiments that can only entail aggravated suffering.

During a residence of quite a number of years on the continent of Europe I have had many opportunities of observing the different phases of

invalidism annually seen at these places, and have arrived at the conviction that in many instances, where these resorts have been judiciously chosen, and their curative agencies honestly and intelligently prescribed, great benefit has resulted to the invalid; but I am equally well convinced that through an imperfect knowledge of Nature's laws of restoration on the part of invalids themselves, or from bad advice given them by ignorant or incompetent advisers at home or by interested or unscrupulous persons installed at these places, such an amount of evil has been inflicted as to render it doubtful whether very sick people would not do better to rely upon the resources of their own land, or upon the unaided powers of Nature within them, than to risk the sufferings and danger expatriation so often entails.

With no pretension to better judgment or more extended observation than many who have already written upon these health stations, I have given in the following pages what I conceive to be their true merits in the treatment of disease, and in this connection have thought it proper briefly to outline some of the general conditions of health and the evidences of disease, with the *modus ope-*

randi of curative agents generally, that the invalid may thereby better comprehend the rationale of his treatment when submitting himself to any of what are popularly known as Nature's cures.

Whilst there can be no doubt as to the efficacy of mineral springs and baths in relieving suffering and restoring lost health to persons affected by curable diseases, it is equally true that for the subjects of grave and far-advanced maladies they can afford but little hope; and in view of this fact, I have devoted a considerable portion of this work to a portrayal of the inconveniences, sufferings and disappointments that always await an incurable invalid in a foreign land.

As a large proportion of this class seen at foreign health stations are subjects of incipient or advanced pulmonary consumption, and as such invalids are usually the most hopeful of recovery and the least disposed to give up the struggle for health without trying all the resources which change and foreign travel can afford, I have also ventured to give the reader a brief outline of what I believe to be the nature of this disease, as well as some suggestions as to the most efficient means of warding it off, and, when once developed, of treating it. In this

connection I have indicated what localities and climates I believe to be the best adapted to a sojourn, both in winter and summer, for such patients, with the kind of life they ought to lead in order to derive the greatest possible benefit from the remedial agencies such localities and climates afford.

HEALTH AND HEALTH RESORTS.

CHAPTER I.

HEALTH AND DISEASE.

UNFORTUNATELY for the science of medicine, it is not demonstrable, hence its most philosophical tenets may be questioned or denied without fear of affirmative proof; yet, notwithstanding this fact, there are general principles embraced in this science and in the laws of the living economy, both in its normal and abnormal state, which, if ignored or misunderstood, will as surely result in evil as will the infringement of any other law of Nature. The proposition that Nature is always, and in all cases, the medium of her own restoration, and that drugs, medicaments and other physical influences only play the rôle of inducing appliances in the treatment of disease, is an accepted principle of modern medical science; hence, to expect Nature curatively to respond, such influences must be used as in their nature are calcu-

lated to apply to the source of derangement through the various agencies of the vital force. In vain may the most powerful drugs be administered for the cure of a purely mental affection if with them moral influences are not combined, and, on the other hand, equally in vain may the sufferer from an enlarged liver or spleen seek for relief under the influence of the most genial skies, balmy atmosphere, or salubrious climes, unless with them he will combine some of the physical agents directly calculated to impress the suffering organ.

Such is the human constitution, mental and physical, and such the relations existing between these two constituents of our being, that whatever strongly impresses the one more or less affects the other.

Health may be assumed to consist in the normal state and harmonious relations of this dual organism, and disease in the abnormal condition of either the moral or physical, destroying, or at least impairing, the harmonious relations existing between them. Consequently, all sanitary science and every effort to relieve suffering and restore health ought to recognize and be founded upon these fundamental principles. This intimate relation between the physical and moral state is witnessed in every phase of our being, and ought never to be lost sight of in the treatment of either mental or physical maladies.

Emotions of the mind, either of a pleasurable

or painful character, if strong and often repeated with short intervals, generally produce a more or less abnormal physical state, which in time becomes a fixed condition or positive disease.

Much of the physical pain and suffering we experience may be clearly traced to a pre-existing mental state of a depressing character; and especially is this the case when a congenital or hereditary tendency to any form of disease pre-exists. Of all the agents tending to develop tubercular phthisis in a system where a tendency to this disease already exists, there is probably none so certain in its effects as protracted moral depression. Neither cold, nor hunger, nor toil, nor suffering, nor privation of any kind, will so surely invade the lungs with tubercular deposits, or hurry pre-existing deposits to destructive supuration, as the clouds and darkness that often settle upon the moral horizon of sensitive persons. Nor is it alone the lungs that suffer from such causes: there can scarcely be a doubt that cerebral, cardiac, and other grave forms of disease have often been induced by long-protracted mental suffering. To the extent that it exists, mental depression is an abdication of the life-force; and this mysterious agent, once relaxing its influence over the physical organism, leaves more or less open the sluices through which morbid agency may enter to develop almost any form of disease.

For many of the maladies and derangements of vital functions under which we suffer, the *materia medica* of the apothecary often fails to afford relief, in consequence of not being administered in recognition of this important fact. An attempt to cure a man of a physical malady by the mere administration of drugs, leaving his moral and intellectual nature uncared for, will, in a great number of instances, prove a fruitless effort. Indeed, the effect of drugs, or other medicaments, upon the human system, is often determined by the moral state under which they are administered; and their good results are generally measured by the sagacity and wisdom displayed, not so much in the selection of the agents administered as the circumstances under which they are given. Many agents of nutrition, in themselves agreeable and exhilarating when taken under proper influences, become decidedly hurtful when indulged in under unfavorable circumstances. Who does not know, from personal experience, that under the genial influences of agreeable company, cheerful, light and social conviviality, a dinner may be eaten and wine taken with not only immunity from suffering or inconvenience, but with positive pleasure, which, if indulged in alone and in a sombre apartment, would be followed by a fit of indigestion and entail indisposition for days? Under the influence of pleasurable excitement and cheerful surround-

ings, a man may drink with impunity a quantity of wine which, if taken alone in the quiet of his room, would surely intoxicate him. In both instances the man's physical condition may be the same; but in the former the cheerful play of his intellectual faculties tones up his physical system to a resistance of alcoholic influence, whilst in the latter, no such genial influence arousing his moral nature above its ordinary status, the potent beverage asserts dominion and produces inebriation.

A person engaged in strong intellectual effort, either alone or in a public assembly, often becomes unconscious of physical inconvenience until a cessation of his labor permits his intellectual soul to descend from its throne of exaltation, and acknowledge in repose the material elements of his nature, which had called in vain during his excited condition for a recognition of their sensibility.

A soldier in the excitement of battle may be struck, and even mortally wounded, without feeling the least pain, until either from sheer loss of blood, or the shout of victory and the battle won, he is called from his enthusiastic combative state to the reality of his material organism and the sensations of his physical life, and then, and not until then, will he suffer.

It is also a well-known fact, at least among medical men, that during the prevalence of any

form of epidemic disease the best guarantee of immunity from attack is a cheerful mind, and that nothing so favors the development of a contagious disease as fear and a desponding disposition. It must be assumed, in this case, that the infection or other morbid influence is present alike whether the disease be contracted or not; and the conclusion to be deduced from this fact is, that the moral and intellectual life-force, holding in one instance the physical nature in strong integrity, enables it to resist the invasion of the morbid agent, or in some way to throw it off, whilst in the other, this life-force being depressed and the organism left without its influence, the system yields to the virus and the disease is at once declared. From the foregoing facts it may be inferred that in the treatment of disease the two distinct elements of our nature cannot be ignored with safety by him who would avail himself of all the aids Nature has placed within his reach.

Discussing now only the general principles involved in curative measures, and leaving to subsequent pages specific instructions, not only as to the choice of remedial agencies, but also the mode of their application, it may be remarked that for the vast majority of chronic diseases and ailments the potions of the pharmacien, administered under the monotonous and sombre circumstances which often surround the invalid, fail to accomplish a

cure simply on account of this fact. It is a homely adage, yet in the light of our present subject one pregnant with truth, that "change of pasture is good for sheep." Indeed, much of the medication of the doctor and his apothecary only implies change.

All that class of drugs known as alteratives—and they are probably the most efficient prescribed in the treatment of disease—imply little else, and favorably affect the subject by producing some sort of change in the physical relations of his organism.

When interrogated as to the *modus operandi* of these agents, the most intelligent physician will only be able to reply that in some incomprehensible and unexplainable way they affect the physical system, either by modifying the proportions of its constituent elements, and thus changing their relations, or by impressing upon them some new form of functional life which results in the removal of diseased action and the recovery of the patient. Leaving aside entirely the treatment of acute disease, which does not constitute an element of consideration in these remarks, it may be safely asserted that this alterative treatment of chronic disease, if not the most philosophical, is without doubt the most successful, and in many instances the only hopeful one. But, however efficient the remedies of the apothecary may be as alterative agents,

those of Nature, sensible and insensible, that daily surround us, play an equally important *rôle* in affecting both our physical and moral condition. The air we breathe, the water we drink, the food that nourishes us, the sleep that refreshes us, the sun that shines upon us, the winds that blow over us, the mountains which tower above us, the plains that are spread out beneath us, and all the thousand sensible and insensible influences daily surrounding us, are potent agents in modifying and giving character to our lives, and may be made available in the treatment of disease, by first comprehending their power and then submitting intelligently to their influence. To the suffering denizen of the crowded city, a trip to the country, where fresh air, uncontaminated by human exhalations or other noxious effluviæ, may be breathed, and where the quiet of Nature, the blooming of flowers, the singing of birds, and the babbling of brooks are substituted for the excitements and perturbing influences incident to the artificial life of large cities, will often produce marvellous improvement in health.

For the inhabitant of the plain, where the monotony of uniform landscape lies continually spread out before him, and the horizon of his vision is bounded by the same low outlines of prospect, an exchange for the picturesque features of mountain-scenery, where rocky cliffs and sequestered valleys, meandering streams and tumbling cataracts present

to the eye an ever-changing panorama and regale the mind with pleasurable distractions, will frequently impart to the flagging vital force a stimulant sufficient in itself to arrest the progress of disease, and in many instances remove it entirely.

On the other hand, where the invalid's home is amongst the hills or in the deep gorges of mountain-scenery, shut off from the teeming and busy thoroughfares of human life, a removal to the crowded city, and contact with the ever-changing sounds and sights of social life and the gay glitter of city pageant, will often arouse the dormant vital force to a degree of energy sufficient to destroy any lurking forms of disease within him.

The seashore also, independently of the benefit derived from its surf-baths, has its claim to curative agency. For the inland sufferer a daily stroll along the beach to look out upon the great ocean in its ever-varying aspects, to listen to the music of the winds as they sport with its waters and crown with fleecy crests its surging billows as they come bounding to the shore, to watch the ever-changing panorama of sail upon its waters passing to and fro with outspread wings like phantom fairy spirits of the deep, and to muse upon the world of hopes and fears, the good and evil destinies, that follow in the wake of the adventurous craft,—these sights and sounds, with their attendant and concomitant moral emotions, are enough in themselves often

to draw off the mind from moody, melancholy thoughts, and to inspire it with such a train of agreeable contemplation as to leave no room for old sensations ; and thus, the concatenation of mental suffering once broken in upon, the physical state, depending upon the mental and always in sympathy with it, will in some mysterious manner respond to the new influences and throw off its morbid incubus, often with astonishing rapidity. So too does travelling of any kind become curative to a certain class of sufferers. It does not matter much where they go, so that they keep going ; but this class of invalids ought to be well defined, or otherwise dangerous mistakes may be made.

There can scarcely be a greater error committed by those who suffer from cerebral or spinal irritation consequent upon protracted and exhaustive mental labor, or by weak and nervous persons from any cause whatever, than to indulge in rapid travelling and extensive sightseeing, either of picture-galleries, churches, palaces, or other such objects. Strange as it may appear, it is through the eye that some of our most painful conditions of fatigue are induced. Nothing so prostrates the whole physical system of persons even in good health as protracted visits to, and careful study of, picture-galleries ; not only the eye, but every muscle and nerve in the system, feels this fatiguing effect impressed through the visual organs upon the brain,

and thence communicated throughout the system. Such sightseeing should therefore be carefully avoided by the class of invalids to which I have just referred.

With most invalids a frequent and agreeable change of local influences, without exhausting effort either of mind or body, will be attended by good results; but, however agreeable this change may be, if attended with the nervous tension involved in constant sightseeing, it will only add to their chances against recovery. A life *sans souci*, and in abandonment to the agreeable influences of sights which unbidden and unsolicited present themselves to the sufferer, is the surest way to secure all the benefits of travel, and the most efficient mode of breaking the links of that morbid chain which in so many instances holds in painful sympathy the physical organism. The influences to which I have here referred are commonly regarded as purely moral, and this may be admitted without in the least disproving their curative agency in disease, seeing that the dual elements of our nature, of which I have already spoken, are, both for weal and woe, so intimately related to each other that to affect favorably the one necessarily affects the other. But is it certain that these are purely moral agencies? It has already been stated that every element in Nature around us is an agent favorably or unfavorably impressing us, whether we are conscious

of the fact or not, and it is more than probable that there are in every locality subtle physical agents, unrecognizable by the appliances of science, which aid in working out the good results so often experienced by change in locality. It is a well-known fact that apparently the same agents produce upon us different effects under seemingly the same circumstances.

A highly-sensitive nervous person will often feel relief or discomfort by a single change in the direction of the wind, even when shut in his chamber without any possibility of its directly affecting him. A warm atmosphere may be either soothing or irritating without any change in its thermometrical condition, and even without any difference in the degree of moisture it contains.

The light, too, that surrounds us has doubtless its different effects upon our purely physical nature. We know that under certain circumstances it will alter the complexion of our skins. We know also that its different tints often give different physical qualities to other objects submitted for any considerable time to its influence. Trout caught in the open portion of a mountain-stream where the light of the sun comes down freely upon the water are always of a much lighter color than those caught under the perpetual shadows of the surrounding foliage in more secluded spots. It is also a fact, observed by every one, that the most sturdy

and flourishing plant, when excluded from light for any considerable time, begins to languish, and finally dies if not brought from the darkness. Inasmuch, then, as the plant and the lower animal are thus acted upon by physical agency, it is not unreasonable to suppose that not only certain modifications of light, but other subtle influences of special locality, may aid the moral in favorably affecting the human physical organism when their presence is least suspected of being a factor in producing this result.

I have already dwelt too long upon these general principles involved in the consideration of health and disease, and shall now offer some suggestions as to the propriety of expatriation in search of health, with such remarks upon the inconveniences of foreign travel and a foreign sojourn as, it is hoped, may deter some of the fatally sick from incurring the expense, disappointment and suffering so surely to be realized by them in a foreign land, if the voyage be injudiciously advised or inconsiderately undertaken.

CHAPTER II.

EXPATRIATION.

So varied are the phases of disease, and so diverse the conditions of invalids, that to attempt to define exactly who should and who should not expatriate themselves in search of health is at best an ungenerous if not an absurd task; yet there certainly is a class of sick people who ought not to leave their homes, or at least their native land, in the hope of finding relief abroad. Were it possible to determine the good and evil results from expatriation in the aggregate of cases seeking health at foreign resorts, I fear the exhibit might deter the legitimate subjects for travel from the venture.

As the sanitary resorts of the United States have already been described in a number of able works, I do not here propose to enter into any description of them, but on this question of expatriation would remark in general terms that in no other country is there a greater variety of climate, mineral springs and seashore adapted to bathing, than in the United States.

In no foreign land can there be found such an

assemblage of intelligent appliances for the alleviation of suffering, nor in any other is there such ample provision made for the comfort of the travelling invalid. Our hotels, railroad-cars, steamboats, and other accommodations for the travelling public are unequalled anywhere; and therefore, as far as these elements contribute to the comfort of the invalid, the odds are largely in favor of the United States. Then, again, it may be fairly questioned whether our mineral springs and sanitary resorts do not possess elements as well adapted to the treatment of the various forms of disease as any of the most famous baths or springs of Europe. Certain it is that our sea-shore resorts, in all that can contribute to the comfort of both sick and well, will compare favorably with the most celebrated of these places abroad.

Our invigorating sea-breezes, our long lines of briny surf rolling in upon gently-sloping shores, our bathing appliances, hotels and *pensions* at these places of resort, also possess beyond doubt as much picturesque beauty and as many sanitary elements as do the most popular foreign resorts of this character. In addition to this, we have within our own territorial limits as great a variety of climate, suitable for either a winter or summer residence for the various classes of invalidism requiring change of climate, as can be found in any country. Indeed, for mildness and equability of temperature during the winter season many of our Southern localities,

such as are to be found in the States of Alabama, Louisiana, Arkansas, North Carolina, Florida, and along the coast-line of California south of San Francisco, equal, if they do not surpass, any localities on the continent of Europe. Neither upon the southern coast of France, nor anywhere under the bright Italian skies, can a winter climate be found so soft, so equable, and so genial to the delicate nerves of most invalids as can be enjoyed in some of our own sanitary stations in Florida; indeed, as a summer resort for overworked nervous systems and prostrated physical frames, our North-western States of Minnesota, Wisconsin, Colorado, Nevada and Idaho, with their clear, bracing, and tonic atmosphere, will bear a favorable comparison with either the Alps, Apennines or Pyrenees.

It is true that the finest of the mountain-scenery and most salubrious localities of these States lie at present beyond the limits of easy access for very weak and gravely-sick individuals, and that the local accommodations so much to be desired by such invalids, and so essential to their restoration, are yet comparatively in a rude state, and cannot be compared with the magnificent and well-appointed hotels which are to be found at summer stations in the mountain-regions of Switzerland and Savoy, and at the great watering-places of Europe generally; but, notwithstanding this fact, it may be fairly doubted whether our North-western sanitariums

may not be resorted to with greater hopes of benefit than the localities of similar character in Europe. If no famous "Righi," "Mont Blanc," "Tête Noir," or "Jung Frau" can be gazed upon without greater hardships than the sufferer would experience in Switzerland, yet it must be remembered that even this feat in Switzerland can only be accomplished by the comparatively strong and at the expense of a certain amount of vital force, of which the very sick or feeble have always need.

For such individuals, even when borne upon the backs of donkeys or upon hand-cars, it is doubtful indeed whether the ascent and descent of Alpine or other steep and rugged passes are not too abrupt.

This transition from one thermometrical and barometrical condition to another, which to a certain class is tonic and strengthening, is generally to the very feeble too sudden; and this, with the fright and perturbation usually experienced by sick persons visiting these places, often produces an amount of evil more than counterbalancing the good derived from the effort. In connection with this subject, there is another fact worthy the consideration of the tourist in search of health amongst the mountain-heights of Europe—namely, that there is not the same amount of comfort to be found off the line of travel by which the annual tide of pilgrims reach these old and oft-frequented sanitary shrines. The routes and stations for even the mere traveller

in Europe are marked out upon the maps with as much precision as the lines upon a chess-board, and he or she who has the temerity to venture beyond or outside of these limits is sure to suffer a great amount of discomfort and inconvenience.

On the contrary, when the summer heats begin to produce their depressing effects upon the feeble or diseased in the large cities of America, a world of delightful resorts, hidden away amongst the hills, may be reached with but little effort and at comparatively little expense.

From the northern coast-line of New England, down through the States of New York, Pennsylvania, Virginia and North Carolina, and westward from the shores of our great northern lakes almost to the Pacific, vast numbers of pleasant and health-giving localities remote from the great thoroughfares, and adapted to almost every morbid condition of life, may be found. Such is the general thrift of our people, and such the material comfort our rural population enjoys, that in the absence of large and commodious hotels ostensibly fitted up for visitors, or even more modest public-houses, there are thousands of quiet and cosy homes amongst our hills embowered in shade and bathed in the most salubrious atmosphere, which possess a degree of unostentatious comfort nowhere to be enjoyed in Europe, or indeed amongst the rural population of any other country. In many of these quiet and

comfortable homes, the invalid whose pecuniary means will not permit of his resorting to the more public places may, at a small cost, find a most genial and health-inspiring retreat.

I have already ventured the opinion that the successful treatment of many purely physical maladies often depends upon the influences applied to the mind, and that if these are genial and of a character to lead the sufferer unconsciously out of and away from himself the prospects of his return to health will be greatly enhanced, and in many cases little else will be required to secure his recovery.

Now, whilst foreign health resorts usually abound in means of mental distractions and amusements, these as a rule are too artificial and exciting, and are more or less calculated to lead to dissipation. But in the United States the invalid has a much wider range in the sources of his diversions from which to select, and can always find enough of outdoor innocent and health-inspiring amusements, without resorting to the artificial and more exciting resources usually provided for him at foreign stations. Should he be piscatorially inclined, he may from almost any given point reach in a few hours' ride a mountain-stream embowered in shade and sparkling in the cool, bracing air of a virgin forest, where he may cast his line from the mossy banks of some quiet nook, and land at will the shy and speckled trout.

If fond of his dog and gun and able for sport, no privileged aristocratic class invested with exclusive rights forbids it or imposes upon him onerous effort to secure it; but field and forest alike invite him out without the formula of official permission, and tempt him to essay his strength in this most invigorating exercise.

If inclined to quiet contemplation, many charming spots may be found in close proximity to most of our mountain-resorts where he may take his quiet stroll along the shady banks of mountain-streams redolent with the fragrant odors of wild-flowers, and thus beguile his feverish mind with a genial train of health-inspiring thoughts. If disposed or compelled by weakness to indulge in still less fatiguing recreation, there are many shady nooks to be found, where, under the hospitable roof of some comfortable farmhouse, the careworn or languid sufferer may sit and read the current gossip of his native land in the journals of the day, brought by the provincial postman, and printed in his own vernacular, and where, when inclined to indulge his often capricious appetite, he may regale himself with rich, pure milk from the dairy near to the neighboring spring, or pluck in lazy leisure sweet, ripe, and luscious fruit from the laden orchard which is an almost invariable accompaniment of an American farmhouse.

Now, these are no mere poetic descriptions nor

imaginative flights, but pleasant realities, which may be, and often are, enjoyed by those who seek them, and are attainable at much less pecuniary cost and personal inconvenience in the United States than in any other land. Indeed, in no other country on the face of the globe can they be enjoyed, for there are no rural homes like the American homes.

But, notwithstanding these facts, there will always be a class of invalids whom no arguments will convince that the resources of a foreign land are not superior to their own, and who will determine to expatriate themselves in order to try their virtues. For many who entertain this conviction, a voyage to a foreign land and a brief sojourn at some well-selected spring or bath will often effect a permanent cure, but, as I have previously stated, there certainly is a class of invalids whom I would earnestly dissuade from this experiment, and among these I would particularly designate all such as suffer from grave and far-advanced organic disease of any of the important vital centres, such as the heart, lungs or brain, or, indeed, from any other form of organic disease which in its progress has produced extreme physical or mental debility and great prostration of vital force. It may be replied that it is generally difficult, and often impossible, for the patient or his friends to determine whether the disease under which he suffers is organic or merely func-

tional, seeing that functional derangement often induces a state of debility and prostration, and even emaciation, quite equal to, if not greater than, that produced by the most fatal forms of organic disease. This is doubtless true in many instances, but in a majority of these doubtful cases, with the aid of an intelligent, well-educated, and honest medical adviser, the truth may be generally ascertained. The sound, practical judgment of a well-educated medical man, assisted by the wonderfully improved appliances of modern medical science, will generally lead him to a correct diagnosis of these cases, and it will only then rest with his honesty or sense of duty to his patient whether or not he will make known to him or his friends his convictions; and when an opinion is solicited with a view to assist the invalid in solving the question of leaving home for the purpose of seeking health, no honorable practitioner will hesitate to make known his diagnosis of the case, however unpromising it may be.

But it may be reasonably inquired why, in determining this question, so marked a distinction should be made between organic and functional disease, and why sufferers from the former should be dissuaded from the experiment of seeking a cure on foreign shores.

To this I would reply that, for a large number of the forms of organic disease, unhappily there is

no remedy ; and for those cases for which a hope of cure remains, but in which disease has already made sensible and obvious inroad upon the strength of the individual, better, or at least as hopeful, resources may almost always be found without the risks of expatriation.

The great discomfort of a long sea-voyage, the landing on a foreign shore, where manners, customs, and usages with which the invalid is often unfamiliar present themselves to him in some vexatious form at almost every turn, constitute an ordeal from which many persons in sound and robust health would gladly flee ; and if this is the case with those in health, what must it be to the languid and weary sufferer, whose every energy is already taxed to its highest state of tension in his resistance of disease ? Nor is it only on the threshold of his foreign experience that these annoying circumstances confront the invalid. He may be in sufficiently affluent or comfortable circumstances to command the services of servants, guides, couriers, or any other assistance that money can purchase (and much can be done by the liberal use of money), to mitigate his discomfort ; but it often happens that these paid agencies, designed to exempt him from care and to promote his comfort, become the sources of endless vexation to him. The dishonesty, duplicity and greed of the characters who offer their services to the travelling stranger on the continent

of Europe are proverbial; and, as a rule, these servants succeed in inflicting upon their employer, through their ignorance or cupidity, more vexation and annoyance than they relieve him of by their imperfect services.

Then, again, no sooner has the health-seeker set foot upon a foreign soil than he finds himself amongst a people of whose language he is often ignorant, or which at best he imperfectly understands. He has to be transported to some interior station of the Continent to whose healing waters he has been directed by his adviser at home, and *en route* he finds on the railroads little or no accommodation whatever for the sick; he is compelled to sit bolt upright in a carriage close and badly ventilated; and if he attempts to admit fresh air by the window, not unfrequently he is suffocated with dust or chilled by a cold current of air which he cannot avoid. He is a sick man in a strange land; and if weary and unable to pursue his journey to its destination without halt, he is frequently compelled to stop at such a hotel as the route affords, often destitute of the comfort he requires. His bed, in many instances, is narrow, short and uncomfortable, and he awakes in the morning, after a comfortless sleep, languid, sick, and unrefreshed. If, on the other hand, in his impatience to reach his journey's end without delay, he determines to pursue his way without stopping

over, he not unfrequently finds himself suddenly arrested at some frontier barrier, where he is compelled to descend and go through the formula of a custom-house examination, and this often in the hours of the night when weary and exhausted nature most requires repose.

To pass this ordeal he must submit to having his trunks and baggage overhauled by brusque officials, who, after satisfying themselves that all is right, order him into a dingy room reeking with fumes of villainous tobacco and other offensive odors, there to await in great discomfort the signal to mount again and pursue his journey. At length, however, through much tribulation, he reaches the goal of his hopes, his promised Canaan of rest and relief from suffering. He selects his hotel or private apartments, and as soon as sufficiently recovered from the fatigues of his journey consults some one of the medical advisers who install themselves at these places for the benefit of the sick. By him he is questioned, examined, auscultated, percussed and otherwise investigated, until his vital and pecuniary conditions are both thought to be sufficiently understood; he is then directed to the specific fountain of health, where he is ordered to drink the waters with scrupulous attention to the directions given him.

The inspiring counsels of his medical adviser, the novel impressions made upon him by the entirely

new assemblage of sights and sounds that greets his senses at every turn, for a while produces a favorable impression upon his nervous system; he feels himself better, and regrets that he has so long delayed his visit to the place now so full of promise to him. He finds the air fresh and balmy; the flowers bloom profusely and the birds sing sweetly around him as, with a crowd of fellow-sufferers, he drinks from the spring with measured precision the liquid potion allotted him for the morning.

He meets on his walks to and from the spring, in their national costumes, the representatives of almost every country on the globe; he hears them talk in almost every known language—all drawn hither from their distant homes by the world-renowned reputation of the waters of which he now drinks. They stroll in pairs through labyrinths of embowered paths, or sit in groups in quiet nooks excluded from the passing crowd, and tell to each other their marvellous experiences of the cure or quietly discuss the passing events of the day.

For a while these new impressions do produce upon the most desperate cases a favorable effect, and upon many a lasting good; but not, alas! upon the class of patients for whom these remarks are designed and whom we are now describing. Were it possible to keep up the pleasurable emotions produced by the surroundings just described, it would be difficult to say what good results might not fol-

low even to these ; but, unhappily soon the novelty begins to wear off ; the same morning walk to the spring, the same draughts from the fountain, and the same daily routine of life begin to weary the sufferer recently so full of hope. The waters that at first seemed to penetrate his every nerve and impart new vigor now cease to strengthen him, if they do not, indeed, sicken, disgust and weaken him. The early hour for rising and his walk to the spring begin to fatigue him ; he drinks his potion with less gusto, and under the influence of a sickened stomach and exhausted nervous system looks around him in a reflective mood, and then, perhaps for the first time, does the suggestion occur to him that these waters may not be so potent to cure in his case as he had imagined.

He sees before him, on the one hand, some pale and emaciated form drinking with the eagerness of despair in order to recover not only strength, but flesh also, and on the other the victim of obesity, laden down, oppressed and struggling for breath under the weight of an unwieldy frame, drinking from the same source in order to grow thin ; the jaundiced and bronzed subject of a diseased liver drinking from the same waters with the thin, pale and emaciated female ; the sufferer from an enlarged spleen, resulting from long saturations with malaria, drenching his system with the same waters as the nervous dyspeptic, the mucous coat of whose stom-

ach and intestinal canal is already from sheer debility as sensitive as a galvanic battery; and the inquiry arises, if he is at all of a reflective turn of mind, whether all these different classes of invalids can possibly be benefited by the same potions, and whether there may not have been some error committed or some injudicious advice given by which so many sufferers, from such apparently diverse maladies, have been sent to the same fountain of health for restoration.

However incorrect or unscientific these inferences may be, they are enough for him to create a doubt, and, faith in the efficacy of the cure he is trying being once shaken, clouds and darkness begin to settle upon his moral horizon. On his morning walks the birds continue to sing as sweetly and the flowers to bloom as profusely as on his first visit, but he begins to believe they are not now for him. He sees the eager crowd as usual pressing around the sparkling fountain, but amongst the drinkers he begins to see sad faces like his own; and if he ventures to interrogate some of them, he is told the same sad story of his own experience—that at first the waters seemed to do them good, but that they had ceased to have this effect. He consults his physician, and is too often assured that if he heroically persists in taking the waters, notwithstanding their present bad effect, he will experience their good results later, that this is just what he ought

to expect, that people always feel badly while taking the cure, and that without this he could hardly expect in the end to be benefited—that it is indeed the legitimate effect of the waters.

But, unfortunately for him, he not unfrequently hears the same physician—in reply to some one of his fellow-sufferers who is descanting in glowing terms upon his continued improvement from the first glass—stating that “that was all right, and a sure evidence that the waters are doing him good.” Sick people rarely do reason well; but it does not require a very logical mind to infer a doubt of either ignorance or duplicity on the part of an adviser from whom such language is heard, and to awaken in the mind of an invalid the suspicion that this spring after all may not be adapted to his case, or that probably even the doctor is deceived or is deceiving him.

I wish it to be distinctly understood that these remarks are not intended to apply to all my professional brethren installed at these health resorts. I happily number amongst my personal acquaintances at them many honorable gentlemen in whose professional ability and honesty I have the greatest confidence; but, nevertheless every honest professional man who has had any experience of watering-places will admit that the picture here drawn is not of unfrequent occurrence.

Positive hope of cure having threatened departure from the invalid, he begins to experience a new series

of sensations; his old malady begins to crop out with unpleasant features; he sleeps badly; his food, that at first he relished intensely, now begins to clog upon his stomach; the midday heats are too strong for him, and the early morning air chills him; his landlord becomes extortionate and exacting; his servants, if he have any, neglect and cheat him; the motley crowd of foreigners, with their quaint manners and curious customs, that at first so greatly amused him, now appear a cold, uninteresting and unsympathetic herd. He begins to think of his friends at home; perchance of prattling children, a smiling wife, or other dear ones left there by a stern necessity which Fate has seemed to decree. He thinks of the great ocean and the thousands of miles that now separate him from his cherished household gods, with all the tender, affectionate local ties that bind him to them. During the day he partially succeeds in suppressing these feelings by his resolute will to recover health if possible; but when Night draws her sable curtain around him, in the quietude of his chamber the ghosts of these blessings, from which he is now so completely separated, haunt his feverish brain, so that when the morning does come, instead of finding himself refreshed, he awakes, a sad and dejected man, only to pass through the same painful experiences each succeeding day, until, in disgust, he determines to quit the place once so full of hope to him, and try

the virtues of some one of the many other cures of which he has heard so much.

Arrived at the second place of essay, he soon finds himself passing through the same experiences as at the first, and in the end realizes the same sad disappointment in seeking relief. And now, what next to be done? is the all-important subject. He would fain try the efficacy of another of the celebrated cures, but the summer heats are now over; the crowd around the springs in the early morning begins daily to diminish; the evening and morning air grows chill; the wind begins to sweep in fitful blasts through the foliage of the swaying trees above him, sending in furtive flight the falling leaves in whirling eddies along the now partially-deserted walks lately so full of life. He is admonished that he ought to leave. He has tried the summer cures in vain, and now there is left to lure him on with hope the pleasant hibernating stations of the South.

On the north coast of the Mediterranean there are Cannes, Nice, Mentone, Huyeres and San Remo, of whose virtues as winter residences he has so often read, and after them there are Pau and other sheltered and more modest nooks amongst the Pyrenees, quiet, peaceful, and remote from the more fashionable resorts. Farther south he has Rome, Naples, Ischia, Palermo, Messina, and the island of Madeira, and still farther away Algiers,

Cairo, and a boat-life on the Nile. All these he considers, and during a winter season tries many of them, but, alas ! with the same disappointing results.

During the summer months many of this class of sufferers may be annually seen amongst the hills and valleys of Nassau, Bohemia, Bavaria, and the Black Forest, experiencing all the inconveniences of expatriation just enumerated, and vainly sighing either for a recovery of health or a return to their distant homes, neither of which is practicable.

Then, again, later in the season the same sufferers, or others of their class, may be seen, languid, seasick and forlorn, on some uncomfortable steamer, the sport of the wind and the waves, beating about the Bay of Biscay, the Gulf of Lyons, or some other waters equally treacherous and stormy, on their way to or returning from some spot of promise beneath the warm skies of the South.

Of the class of invalids to which I now refer, they are fortunate indeed who live to return to home and friends ; for annually a large percentage of them finish their course amongst strangers, without the ministration of tender and sympathetic friends or the consolation of cherished relatives. It not unfrequently happens that amongst this class there are those whose pecuniary means will not admit of their securing the material comforts so essential to sick people both at home and abroad, and to them a sojourn in a foreign land is peculiarly

trying. They are not unfrequently told that the cost of living is much less on the continent of Europe than it is at home, and, gathering together their scanty means, they start, only to realize that from the time they set foot on a foreign soil they are beset at every turn by a crowd of hungry cormorants, who, taking advantage of their ignorance of the language and customs of the Continent, filch from them, for all kinds of petty services, the gold they can so little spare. This of course becomes a source of vexation and nervous excitement highly injurious to health. They soon likewise discover that this cheap living is a myth, even when they have quietly settled down for a cure, and that to enjoy the same comforts they are compelled to pay even more money than they would at home.

Thus a new disappointment commences its depressing work upon them; but they have made the venture, they are thousands of miles from home, with a great ocean intervening, so that, if disposed, they cannot now retrace their steps, and they settle down as best they can to try what can be done for them. They soon discover that to procure proper lodging, food, and the other comforts their condition most requires involves an expenditure beyond their means; they chafe under this thought, and at length, from dire necessity, are compelled to go into quarters suited to their means—often neither the most cheerful nor salubrious—to eat such food as can be pro-

cured for a very moderate sum—often crude and indigestible—and, in general, to dispense with the very material and moral influences that constitute in great part the curative agencies of these places.

No more pitiable sight can well be seen than a very sick man far from home in a strange land, deprived of social intercourse with valued friends, and without the requisite means to procure the material comforts which, at best, can but imperfectly compensate for the simple, it may be, but cherished, local ties of home.

I have now drawn what I conceive to be a true yet feeble picture of the privations and disappointments generally experienced by persons who suffer from incurable disease, and who have been encouraged or advised to go abroad for health. It is always a painful duty for a medical adviser to be honest with his hopelessly-sick patient in dissuading him from experiments to which his almost despairing hope would fain cling; but it is nevertheless a duty when, from his superior knowledge, he is convinced that the experiment will entail additional and unnecessary suffering upon his patient, without any hope of benefit; and as in this work I have assumed the character of an adviser, it is equally painful for me to be honest in dissuading mortally-sick patients from the hope of relief by a resort to foreign cures. The picture above presented is but a faint exhibit of what has passed

under my own observation, time and again, during my residence abroad, and nothing but a sense of duty towards my less-experienced countrymen has induced me thus to write; but I entertain the hope that the facts herein detailed may at least lead some of this class of invalids to reflect upon the venture they would make, and be persuaded to seek for relief, if not cure, amongst their native hills or at their own seaside resorts, amongst, or at least within easy reach of, familiar friends, to whom, in the easy flow of their own vernacular, they can make all their wants known, and by whom they may be cheered and comforted in their hours of sadness and depression.

Happily, perhaps, for suffering humanity, no mortal man can draw the line in every case between the curable and incurable; therefore the precious blessing of hope often remains to cheer the sufferer even on the borders of despair, and this hope will doubtless continue, in spite of all arguments to the contrary, to lead many to try the very experiments I herein deprecate. I feel assured, however, that if both medical men and the friends of patients sick with mortal disease were properly to consider this subject, and join their voices in a protest against expatriation, they would confer a favor upon some at least, and save them from much unnecessary suffering. If there were no healing waters or genial climates adapted to the treatment of the same

diseases in our own country, then it would be more than cruel to dissuade even the most desperate cases from trying the experiment of a foreign land; but it may be doubted whether there be a malady for which the resources of a foreign land promise a chance of cure, that may not be hopefully treated in the United States. There is scarcely a mineral spring in Europe that has not its counterpart in our own country, nor is there any variety of climate, any atmospheric condition, either barometrical or hygrometrical, that may not be found in the United States. Therefore I would again, in the light of these facts, reiterate my protest against expatriation on the part of all persons laboring under advanced mortal disease.

CHAPTER III.

GENERAL PRINCIPLES OF REGIMEN FOR INVALIDS AT HEALTH STATIONS.

FOR the presumably-curable sufferer who has availed himself of intelligent advice at home without finding relief, and who has determined, notwithstanding the inconveniences he may experience, to try the resources that yet remain to him at the sanitary stations on the continent of Europe, the subject of regimen is of the utmost importance; but so differently are we constituted, so numerous are our idiosyncrasies, and so varied are the forms of disease from which we suffer, that to attempt instructions applicable to every individual case would be an impossible task. There are, however, a few well-established regimic principles which, if clearly recognized and faithfully observed, will in most cases serve as a safe guide to the invalid stranger visiting for the first time foreign health resorts.

To one who, without any fixed purpose of trying what are commonly called the cures of Europe, proposes to seek relief in the novel and agreeable distractions incident to travel, there is much in

motion and the consequent contact with the scenes of an older civilization to encourage hope; but it must be judiciously enjoyed, or otherwise it will only prove hurtful. On landing for the first time on the shores of Europe, its traditions and histories, its splendid cities crowded with monuments of art and architecture, its galleries of paintings, museums, gardens, and other places of interest of which the tourist has so often read, and of which from his infancy he has, perhaps, so often dreamed, will all crowd upon his imagination with such vivid and bewildering force that he will be in the greatest danger of overestimating his strength, and will be tempted at the very outset of his experiment to overtax his energies in his desire to see and enjoy too much in a given time. The novel and exciting scenes that will surround him at every step will so act upon his imagination, and so arouse his feeble energies, that for the time he may forget his debility and plunge headlong into the vortex of exhaustive sight-seeing, only to be awakened from his delusion by the stern demands of exhausted Nature for the repose and rest of which she has been deprived, often expressed in an aggravated attack of his old malady. In some cases of purely functional disorder this excessive distraction, breaking in upon previous sedentary habits and morbid imaginations, will be attended with permanent benefit, but in the great majority of cases a degree of harm will be done by

this over-exercise of mind and body that months of subsequent care will scarcely remedy. "Patience and prudence" should be the motto ever ringing in the ears of the sight-seeing invalid. He should remember that through the eye, as well as through the ear, some of the most fatiguing and exhausting impressions are often transmitted to the brain, and thence, through the nervous system, to every part of his body. The mind of such an invalid should be amused, but not fatigued; his diet should be nourishing, not indigestible. He will not be able to drink pure, cold water as he could in many parts of the United States, however abstemious from wine he may desire to be, for in the majority of the localities he may visit he will not find it; nor is it desirable he should make water his beverage. It will be found, as a rule, that the work of recuperation in cases of mere exhaustion of vital force will not go on so well without some adventitious stimulant of a mild and generous character as with it; but of this I now propose to speak more at length in discussing the special subject of beverages.

BEVERAGES.

The climatic and other physical influences affecting all races and conditions of men play so important a part in creating a desire and determining the

necessity for adventitious stimulants that the subject of daily beverages for invalids travelling for health becomes one of the first importance. That under some circumstances moderately-stimulating drinks may be daily indulged in, not only without detriment to the constitution, but with positively fortifying effect, which under others would induce habits of drunkenness and a rapid decline of vital force, is a fact of which I have the strongest conviction. Hence, I assume that the indiscriminate proscription of such beverages, both for sick and well, is neither a philosophical nor a safe practice.

I am well aware that exception will be taken to this opinion by many learned and intelligent people, and the counter-assertion made that the wine- and beer-drinking of Europe and other countries is only a pernicious habit; that an individual confining himself to pure water as a beverage can perform as much labor, both physical and mental, as he who drinks either malt or vinous liquor, and will sustain a fatiguing process even longer. These opinions, whether founded on fact or not, have at least the merit of inculcating the doctrine of sobriety, and, were it possible to persuade the world to act on them, would doubtless save it from much demoralization and suffering; but unfortunately the teachers of both morality and science have to deal with the world as they find it, and hence the true prov-

ince of the moralist and scientist is, not to evade the investigation of phenomena that appear to militate against their theories, but to attempt rationally to explain them, and, if possible, to make this explanation contribute to the general good.

To determine by experiment exactly how much truth or error there may be in this abstinence theory would be a most difficult task, seeing that no few isolated cases, submitted to the most rigid experiment, could determine so great a question, the solution of which involves the appreciation of every conceivable type of character and measure of vital status, under almost every conceivable application of the law of supply and demand. I do not wish here to be considered as entering any plea for social drinking, nor would I be thought to advocate that which in the end might lead to drunkenness, but in the discussion of this subject of beverages, both for the sick and well, there are certain established and well-known facts that merit consideration and ought not to be ignored. I propose, therefore, now to offer some passing remarks upon the philosophy of all stimulant beverages in their relation to some, at least, of the various phases of human life.

It will not be denied by any intelligent traveller on the continent of Europe that the lines of latitude defining the *habitat* of the grape, and the use of its juice as a beverage, determine, with almost equal

precision, the shades and degrees of drunkenness as a local evil. Throughout Italy, Spain, and Southern France, where the vine flourishes and wine is a common beverage, there is witnessed less intoxication than in any other countries of Europe; but as we come northward, through every line of latitude up to St. Petersburg or Moscow, we may and will observe, if we look for it, a gradually-increasing amount of local if not national drunkenness. Now, this difference in the habit of inebriation cannot be accounted for upon the ground of national peculiarity, for it is a well-established fact that Italians and Spaniards, of temperate habits whilst within their own national limits and drinking their own native wines, on emigrating to more northern climates have become the veriest drunkards. Nor will it do to say that the more northern nations are *per se*, or in virtue of their national blood, more addicted to intemperance in drinking than the other nations of Europe, for it is equally well known that individuals removing from these latitudes, unless confirmed drunkards before leaving, more or less lose the desire to indulge in strong drink in proportion as they find themselves contiguous to or in the land where Bacchus loves to dwell. The inference to be drawn from these facts is, that not the use of light wines alone prevents a growing taste for strong drink. This doubtless has much to do in securing a temperate use of stimulating bev-

erages, but it would fail were climatic influences the same as in less favored lands. The broad principle and great physiological fact—the one pertinent to our present subject—is that where the vine flourishes and men drink for their common beverage its generous juice, there the subtle and often inappreciable atmospheric influences are more soothing, act less harshly upon the living economy, and exhaust less rapidly its vital force, thus obviating the necessity of a recourse to strong stimulants. I am inclined to differ from the generally-accepted theory—namely, that stimulants only arouse the dormant or latent energies already existing in the individual to whom they are given, and that in every case the collapse or depression succeeding the period of stimulation marks exactly and in a just measure the extra-expenditure of vital force during its influence. On the contrary, there can be but little doubt that the moderate use of alcoholic, malt, or vinous liquors, as well as that of tea or coffee, acts as a conservator of vital force by modifying in some way vital friction.

It does not, therefore, necessarily follow that depression shall succeed gentle stimulation. As oil applied to a delicate piece of machinery prevents its parts from heating and corroding under friction, so, in some mysterious manner, do the agents we call stimulants prevent the wear of the living machinery under fatiguing and exhausting efforts in health or the wasting influence of many

forms of disease, and, thus acting, become strict conservators of vital force. Were it possible to ascertain, it would be an interesting fact to know, the annual saving of animal food for the toiling millions of the world that results from the use of what are generally known as stimulant beverages. That more severe labor can be endured under a given amount of food in connection with the use of stimulant beverages than without them, there is scarcely room for doubt. A soldier in the field can endure the fatigues and privations of a long march or painful picket vigil much better if his food be supplemented by strong coffee than without this beverage. A sailor, however well nourished, compelled to be aloft in the rigging, shifting sails and dragging at pulleys, in storm and tempest of driving sleet and wind, for hours at a time, will bear this fatigue much better under the influence of his apportioned grog—or, what amounts to the same thing, his bowl of strong coffee—than without either. Of course, if either soldier or sailor be already a drunkard, these remarks will not apply, for such a man is to all intents and purposes an invalid. Now, neither to the soldier nor the sailor do these agents impart any considerable nutriment; but by holding the vital organism in a state of physical integrity, and preventing disintegration and waste under the strain made upon it, they act as conservators of vital force.

It has been my privilege to indulge in many shooting-excursions amongst the barren hills of Bohemia and Bavaria and throughout the highlands of the German Empire, and on these excursions to have come in contact with the peasantry, who glean from the bleak slopes of these mountainous regions, by the most unremitting toil, the scanty subsistence of a simple life. No amount of human energy would there enable these creatures to procure by the cultivation of the soil, after paying the exorbitant rent often imposed upon them, a good nourishing diet of animal food; yet there they have lived from generation to generation, a frugal, strong, temperate, and comparatively healthy people, who, though exposed to all the rigors of a rude winter climate, and compelled to submit to the uncertainty of a capricious harvest season, have combated successfully these adverse elements and sustained themselves manfully in the trying struggle of life. On contemplating these people at their daily toil, and with their meagre and often innutritious diet, the question has often forced itself upon me, How do they manage with such labor to live on the food they eat? and not until I saw the pot of beer found upon every board, however rude, obscure, and remote from the great cities, could I satisfactorily answer that question. In that mug of beer, universally resorted to throughout these regions, is the talisman to be

found that explains this phenomenon. To the simple peasant of these mountainous regions it is the fuel that helps to keep him warm during the inclement season of winter, when his scanty supply of wood or coal is not sufficient to keep out the rude winds that sweep around his mountain-home; it is the compensating agent that holds his animal organism in its integrity, when, under the heats of summer, with but a scanty diet, he is compelled to wring by constant effort his meagre harvest from an ungenerous soil.

That such is the action of these agents upon the living economy of these mountain-peasants I have not a doubt, and this theory of the action of stimulants may generally, I think, be also proved by experiments on their influence in cases of strong and protracted intellectual effort as well as in those of physical exercise. It is a physiological fact that under protracted and exhausting intellectual labor the renal secretions are generally greatly increased, and also that these secretions contain an abnormal amount of phosphates, resulting, beyond a doubt, from the breaking down and disintegration of brain-matter, of which phosphorus is an important constituent. Now, experiments have also proved, that the individual who, under such circumstances, has been moderately supplied with either coffee or tea, or any other light stimulant, has exhibited in these renal secretions very much less of the com-

pounds of phosphorus than when he has abstained from these beverages. The only inference to be drawn from these facts is that there is not in the latter instance so large a disintegration of brain-matter, and, consequently, that the effort under stimulants leaves the brain in a better state of integrity. It does not hence follow that stimulants can be resorted to under moderate excitement with impunity. The living economy has its law of waste and renewal under the normal play of its functions, and a moderate but constant waste and renewal of integral structure is absolutely necessary to the healthy state. As alcohol, in whatever combination found—whether in malt liquors, light wines, or in the more concentrated form of brandy, gin, or whiskey—is unquestionably, in the sense heretofore mentioned, a conservator of organic tissue, it may and does become an injurious agent if taken when the vital force does not require this influence. Though harmless and often beneficial when taken moderately under fatiguing exercise or excessive mental labor, it is at least strongly presumptive that when taken even moderately under circumstances not requiring an economy of vital energy, it has an injurious effect by arresting the healthy action of the secreting organs, and that when taken in excess and for a protracted length of time, as in the case of habitual drunkards, all that train of frightful disorders so

often witnessed in these cases may be directly attributable to its action.

In addition to the simple toxic effect witnessed in the case of a confirmed drunkard, there is an assemblage of morbid phenomena that may be most rationally accounted for upon the hypothesis that the saturation of the system with alcohol prevents the process of waste and renewal, and holds in the organism matter beyond the healthful period of its integral life, until it becomes in a manner a pernicious agent, expressing its presence in the frightful category of mental and physical phenomena witnessed in the confirmed inebriate. And thus it is that an agent healthful and conservative of life-force when taken in proper quantity and under proper circumstances may become a frightful agent of destruction and death if imprudently indulged in.

To an individual in health, confined to a quiet room, without active occupation of either mind or body, and having the smallest possible demand made upon his life-force, a cup of strong tea or coffee, taken before going to bed, will give him a wakeful and restless night, but if that same individual should return to his room after a severely-exhausting day's exercise, a cup of similar tea or coffee before going to bed will soothe him into a quiet and undisturbed repose; and so it is with all stimulating beverages. Man demands, under cer-

tain circumstances, some sort of adventitious stimulus to help him through the toilsome race of life, nor has any race of men been found, either civilized or savage, that has not had its stimulant agent of some sort, to which resort has been made under extra effort of the life-force. Unhappily, however, as in the case of many other beneficent gifts bestowed for the special purpose of aiding man in adjusting his effort to the arduous duties the vicissitudes of his imperfect life impose, and for which his reason has been given him, he discards the teachings of reason, and, following his instincts and appetites, converts a blessing into the veriest curse that could be inflicted upon him. But it may be claimed, since this is so frequently the case, and so much evil results from the abuse of these dangerous blessings, that it would be better to dispense with them altogether. To this I can but reply that for some inscrutable purpose the Author of our being and Architect of the universe has chosen thus to let it be, and that the province of the philosopher, as well as that of the moralist, is not so much to attempt to eradicate evil and change the natural instincts of man as to endeavor to teach him how he may govern these instincts and so regulate them by the dictates of reason as to secure to himself the realization of the highest good from the gifts of God.

Any other course will undoubtedly fail, and he

is the greatest benefactor of his race, who, instead of attempting to expurgate the evils of the world that beset his brother, will rather take him by the hand, and in the light of a cultivated and Christianized reason point out to him the dangers that lie in his way, and, in view of the race that is set before him, impress upon him his responsibilities for the manner of his life and the use he makes of his rational, reasoning soul in the proper appreciation and use of his blessings. ~

I have been led into this apparently digressive train of remarks from a desire to impress as strongly as possible upon that class of invalids who seek health amongst the distractions and amusements of an European city, rather than from any specific spring or bath, the importance of a proper use of stimulating beverages in their daily life. It would be vain to assert that the same habits of life can be healthfully observed in travelling on the continent of Europe as in America. The sensible as well as the insensible influences that surround the traveller are not the same. Whether it be some peculiar modification of the oxygen, electricity, or ozone of the atmosphere I will not stop here to inquire; but that the types and characters of the lives of men as well as of the lower animals are different there can be no doubt.

In what part of the United States could be

found any given number of active, intelligent men who would sit for hours at a time in placid repose over a mug of beer, or stroll in lazy contentment to and from their places of business, as though an excess of leisure had prompted them to a promenade? Yet, this is to be witnessed, as a rule, in every city of the Continent. Indeed, it is a question in my mind, whether the great achievements we as a people have made in mental and material improvement have not been to a great degree the results of climatic influence—whether our magnificent network of railroads, our splendid cities, our ships of war and commerce, our bridges and tunnels, and all our teeming industries that have sprung into existence within the first century of our national life, have not been more or less forced upon us by the occult influences of the atmosphere surrounding us and impelling us on, in spite of ourselves, to an irrepressible activity. We could not be quiet if we would, no more than can the denizen of the older continent throw off the sobering influences that affect him and spring into the active life of young America. This distinctive characteristic is not alone confined to the men and women of the Continent, but it is also clearly manifested in the lower animals. From the islands of Sicily up to the northern confines of Norway and Sweden (excepting perhaps in the high mountainous regions of the Continent), the very dogs bark lazily, the

cocks crow rarely, and all the brute creation moves and acts languidly. How rarely in the cities of Europe do we see the horses, out of pure exuberance of life, break from their grooms and run madly off, creating fright and havoc in their way! and yet with what perfect deviltry do *our* horses run off under the influence of a sharp, keen, bracing air of an autumn morning! How irrepressible the movements and the lusty bark of our dogs! and with what a sharp, clear, and often defiant ring does Chanticleer make his presence known! There is, beyond all doubt, a difference existing in the stimulating influence of the atmospheres of the two continents, more or less modified by the geographical and isothermal lines of both, but sufficiently general to give each a continental characteristic. But whilst it is an admitted fact that the lines of latitude on the continent of Europe more or less correctly mark the *habitat* of drunkenness, is it not equally true that they mark the character of atmospheric conditions?

It is a well-known fact, verified by the experience of every observing traveller, that in all that portion of Northern Europe bounded by the coast-line of the North and Baltic Seas, and especially throughout the countries of Holland, Belgium, and the lowlands of North Germany, the atmosphere is of a peculiarly depressing character, producing upon the nervous system a relaxing influence and

inducing a sense of languor and debility under a very moderate degree of exercise or effort. The fact that, throughout this region just mentioned, drunkenness or an over-indulgence in strong drinks is more prevalent than in any other portion of the Continent is partially explainable upon another hypothesis than that of climatic influence—that of exhaustive labor, which under any climate produces the same effect upon the living economy as depressing climatic influence.

Whatever may have been the history of the southern countries of Europe in the past, it is a fact that the great commercial marts and the manufacturing and material industries are now found in the more northern countries of the Continent. The working-classes employed in these industrial establishments, as a rule, are subjected to much more exhaustive daily labor than are the workmen of the more rural and agricultural districts of the southern cities of Europe, where the material industries are generally of a lighter and much less exhausting character.

Indeed, the cultivators of the land throughout a large portion of Northern Europe, where Nature has not been so lavish of her productive soil and fructifying suns, are subjected in their daily life to a much ruder task than are the denizens of the vine-clad hills and the olive-groves of the south. This more laborious life, in connection with the

relaxing tendency of the atmosphere that surrounds them, will, to a great degree, explain their frequent resort to strong artificial stimulants. The healthful beverages of good coffee and tea, in consequence of their cost, are too often beyond the reach of this class, and, if attainable, are not so convenient a stimulant to meet the exigences of their daily labor. The result is that, prompted by strong demands made upon their relaxed vital force, they too often discard even their healthful mug of beer, and resort to the crude and ardent spirits made from the potato or other alchohol-producing roots and grains, and which they find not only more easily procured, but often more economical ; consequently, from motives of economy and convenience, they grow into the use of these strong and exciting drinks, which sooner or later impair their digestive organs and create, at the same time, a morbid appetite for a repetition of strong stimulation, even in their leisure-hours, which in the end makes of many of them confirmed drunkards.

So it is with the workmen employed in the great material industries of the north. The men employed in the large manufactories of cast metal, iron, steel, copper, lead, zinc, and glass of the north experience the same necessity for artificial stimulants as the toiler in the field, but to a much greater degree, and from the same causes fall into the same vicious habits ; but with these men the

lighter influence of cheap wines or malt liquors is not so satisfying as with the cultivator of the soil in the open air. Under the glare of glowing furnaces and the intense heat of incandescent metal, before which they have to stand for hours at a time, the instinctive demand of Nature for some adventitious support is very great, and, yielding to this instinct, they indulge in the more potent and promptly-acting stimulants.

It is not, however, whilst these men stand before their furnaces and struggle with ponderous masses of glowing metal that we see them intoxicated; for under this tension and strain of their vital force the influence of strongly-stimulating drinks is consumed as the oil upon the machinery disappears under the rapid revolutions of the flying wheels and spindles. It is after the day's work is over, and the period for rest and relaxation comes, that, resorting to the cup which has sustained them in their hours of toil, under the illusion that it will still minister to their comfort, they drink and become drunk; and the habit of intoxication thus induced sooner or later becomes an ungovernable passion, and brings with it its train of demoralizing influences, which in the end work such evil amongst this class. Hence it is that from these two causes combined we see so much more inebriation in the north of the Continent than in the south.

The very same causes will explain why it is that throughout the manufacturing and commercial towns of Great Britain so much drunkenness is observed. It is true that in Northern Russia, where but few great manufacturing establishments exist, drunkenness prevails to a fearful extent; but in Russia it is chiefly confined to the great cities of the empire, and there another influence exists, which, though different in character, tends to produce the very same results. In these northern cities of the empire there is a vast amount of destitution and want amongst the laboring-classes; the winter season is long and intensely cold, and under the influence of this low temperature, with inadequate protection against it, a most exhaustive abstraction of animal heat is constantly taking place; and thus, from being badly fed and clothed during this inclement season, the poor are compelled to resort to carbonaceous or heat-producing elements, the cheapest and most available of which is crude strong drink. Indulging in this at first from a necessity, and being unable to govern by reason the instinctive desire of Nature for support, they over-indulge, and degenerate in the course of time into confirmed drunkards.

Like every other inheritance of man, whether in itself good or evil, stimulants must be used or avoided under and in accordance with the dictates of reason and the judgment which God has given

man for this special function, and he who, without a reasonable motive, drinks stimulating beverages which are known to intoxicate is as guilty as the man who, knowing arsenic to be a useful medicinal agent when given for certain forms of disease, indulges needlessly in its use, to the destruction of his life.

With this attempt at an explanation of the philosophy of stimulant drinks, I now return to the subject of beverages for the sick traveller on the continent of Europe. As a rule, the voyaging invalid ought to drink at his daily meals some of the lighter wines, determining his selection by the tolerance with which his digestive organs bear the use of any one of them, but a recourse to strong alcoholic drinks will scarcely be necessary. In general, the use of stimulating drinks for invalids should stop with this indulgence at the table. No greater error can be committed, nor one more full of danger to the subject, than for a person slightly out of health and more or less broken down to install himself in any of the great cities of Europe and commence a course of gormandizing and habitual drinking. It will be admitted that the temptation to such a life is strong and almost irresistible. A man suffering from overwork and anxious care, finding himself suddenly transported from the scene of his labor or anxiety to a gay foreign city teeming with amusing sights and other agreeable attractions, with money

in his pocket to supply his every want, and an unbounded amount of leisure on his hands, is always in danger, and without exercising strong self-denial will often over-indulge his appetite. Many a sad page of personal history might be written from the record of such cases.

The idle life, the absence of healthful occupation, and the ennui resulting from such a situation conspire to induce habits of sensual indulgence, and of these the use of stimulating drinks is undoubtedly the most frequent and dangerous. The invalid, therefore, who only feels himself slightly out of health, who leads a life of such leisure in a luxurious city, and has a reasonably good and nourishing diet, cannot with impunity indulge to any considerable degree in any of the forms of stimulating drinks, for in so doing he will violate the law of supply and demand of vital force, and will be visited with its penalty as surely as though he had violated any other law of Nature.

The cemeteries and burial-places of the great cities of Europe abound with the graves of young Americans who, in their search for relief from impaired health amongst the distractions of large foreign cities, only increased and intensified their morbid conditions and hurried forward a premature death in a foreign land by over-indulgence in strong drink under the circumstances just mentioned.

In determining the appropriateness of stimulating beverages to their cases, sick people should not always be governed by the immediate pleasurable sensations they produce. These constitute a fitful flame, transient in character, and in the end will often disappoint them. They should judge rather from the remote than the immediate effects of these drinks. If under their use the appetite is improved, difficult and painful digestion ameliorated, and sound sleep, with invigorating morning strength, promoted, they may justly infer that they are doing them good; but if, after the first agreeable impressions wear off, they experience renewed gastric suffering, or after a night's sleep wake up weak and nervous, with confusion of intellect and a bad taste in the mouth, or with any other unpleasant sensation, they should at once abandon all alcoholic stimulants for the time, and permanently if these effects should recur.

There are doubtless many invalids who refrain from the use of wines for dinner, under the apprehension that this indulgence may lead finally to habits of intemperance, but this I think a groundless fear. I do not hesitate to venture the assertion, that no man ever became a drunkard by using as a beverage at any of his meals the light, pure, red wines of France. It is only by indulgence in the more heating and stimulating drinks that this danger is incurred, and especially when they are taken at irregular hours, and on promiscuous occa-

sions for purposes connected with convivial gatherings or for the temporary excitement they produce.

In such cases there is danger even in the indulgence of malt liquor, and the surest way to guard against it is not to drink this class of beverages under any circumstances.

DIET.

At every important mineral spring in Europe lists of dietetic articles, permissible and forbidden, will be found. These tables, prepared for the benefit and guidance of patients, although often more or less absurd and unphilosophical in their character, contain, as a rule, enough of the teachings of experience to guard the majority of sensible invalids against great errors in diet ; but, whatever prohibition they may contain, no one, in attempting to comply with their conditions, should so observe them as to deprive himself of a proper amount of palatable nourishment.

The invalid whose vital status has been reduced, either by mental anxiety or physical disease, should not entertain the delusion that he can ever regain his lost health and spirits by confining himself to an unpalatable or insufficiently nutritious diet, even under the healing influences of the otherwise most potent agencies ; he should let neither precon-

ceived notions nor the advice of any doctor persuade him that anything else than that which is taken into the stomach as nutritious food is ever going to restore lost flesh and vital force. Medicaments may remove disease, but they cannot impart strength, neither can an insufficient diet increase vital force; therefore, whilst all articles of diet from which daily experience teaches the invalid that he specially suffers should be avoided by him, he should let the law of demand and supply guide him in the use of those nutritious articles from which he does not suffer. The voice of Nature, as expressed either in our painful or pleasurable sensations, is generally a safe guide in determining what we should eat and drink and how we should live; but it must not be the unintelligent and incoherent articulations of this great monitor, else the confirmed drunkard might claim the inordinate indulgence of his depraved appetite, which incessantly cries for the strong drink that is destroying him, and the *gourmet*, in whom every sense of gratification has died out excepting the gastronomic, that he too, irrespective of an already engorged liver or a general plethora threatening him daily with apoplexy, should continue to stuff his stomach because it gives him a sort of pleasure. These are but the nightmare cries of suffering Nature, calling loudly for the awakening of the sleeper from his dangerous condition; but the

sensations to which I would recommend my readers to give heed in this matter of diet, including drink, are those experienced by a sober and temperate indulgence in these articles. Even in health a diet that suits one will not suit another, and *a fortiori*, under disease, such distinctive peculiarities are often greatly increased, therefore the impropriety of a general rule for all patients, irrespective of their morbid condition; hence the necessity of experience and the exercise of sound judgment in this matter. The law of demand and supply implies an amount of nutritious food proportionate to the daily waste from physical or mental labor or the exhausting influences of disease; and he who with judgment so measures this demand as neither to fall below nor exceed its proper supply best fulfils this law, and needs but little specific instruction.

CLOTHING.

The manner in which invalids should clothe themselves whilst at foreign springs and watering-places is also worthy of great consideration. By common consent, the summer season has been adopted as the time for visiting those at least of France and Germany; and as a majority of visitors to these places find themselves more or less foreign-

ers to the climatic and other influences surrounding them, a few practical hints on the subject of clothing may not be without value. In the valleys of Nassau, Bohemia, and Bavaria, where most of the German springs are located, however hot the day may have been, after the going down of the sun a rapid cooling of the earth's surface and condensation of the atmosphere set in, so that before the early morning has arrived a damp chilliness pervades most of these valleys, not to be entirely dissipated until after the usual morning hour for resorting to these springs. All such persons as are reduced in flesh and vital caloric should therefore go warmly clad to their morning glass, nor should anything tempt them to go unprovided against the damp and chill they will often encounter in late afternoon excursions amongst the hills.

As it is through the skin that much of the depurative agency is accomplished in the treatment of many forms of disease, a general warmth upon the surface, inviting to its capillary system the current of circulating fluids, enables it to throw off noxious matter which under a chilled surface would not only remain, but would often be driven within upon some already suffering organ; hence the absolute necessity of guarding against any sudden revulsion, occasioned by exposing the skin too much to a damp and chilly atmosphere at any time of the day.

These remarks hold equally good with reference to exposure to night-air. Should the patient be of a contemplative turn of mind, the beauty of a bright moonlight will often have a strong tendency to tempt him out of his quiet, dull chamber to the shadowy nooks amongst the surrounding foliage; or if fond of music, he will be tempted to sit in the still night-air listening to the concerts usually given in the evening at all popular watering-places. However strong the temptation to indulge in these and other pleasures, the invalid should, in every case, be guarded against the insidious influence of night-air; he should remember that every invalid is a sensitive barometer as well as thermometer, and, although his sensations may not always indicate to his consciousness the changes to which he is subject, his material organism will, nevertheless, register them with an unerring certainty, and often to his painful experience; therefore, against the night-air he should be sure to be provided with good warm wraps. On the other hand, too much clothing, inducing a relaxed condition of the surface vessels, will tend to exhaust their contractile force, and thus convert them into passive agents upon which every vicissitude of the surrounding atmosphere may exert an injurious influence.

Flannel, where it can be borne, should always be worn next to the skin, even in the heat of summer,

for from the nature of its texture it induces a better circulation to the surface, and better guards against the effects of sudden atmospheric changes than either linen or cotton, and is indeed preferable to silk for all these purposes.

CHAPTER IV.

THERAPEUTICAL ACTION OF MINERAL WATERS.

OF the fact that mineral waters, of whatever character, when taken internally, do impress the system there cannot be a doubt, but the *modus operandi* of this action is often most difficult of explanation upon any known principles of medical science. That they are subject to a process of digestion in which a part of their constituents subsequently enters the circulation is equally without doubt, but the *rationale* of the changes they produce in the vital phenomena is certainly not explainable upon the theory of chemical action.

Chemical analysis determines for us the exact proportion of sulphur, iron, iodine, bromine, soda, lime, magnesia, and other constituents found in these waters, as well as the chemical combinations in which these elements exist; but no artificial combination of any of them, when taken into the system, will produce upon the subject the same sensible effects.

That this difference in action depends upon some occult agent or agents of so subtle a nature as to

evade analytical test is an opinion to which many good authorities of the present day now incline; and this hypothesis would seem to be strongly supported by the fact that many of these waters emit odors and impart tastes to the palate in some instances strongly resembling those of animal matter, and in others impressions both to the olfactories and the palate that are not explainable by the known combinations of chemical agents they contain.

A large majority of these waters are, in their primary effects upon the system, stimulant, producing an increased activity in the circulation and an increase in the secretions of the intestinal canal, liver, kidneys, and skin, a strong determination of activity toward the capillary vessels of the surface being also one of their most uniform effects. The brain, too, experiences marked impressions under their use. In many cases vertigo, singing in the ears, and vague and undefinable flashes through the brain, resembling faint electric shocks, follow their use. Insomnia, or a broken sleep with troubled dreams, is also often experienced after drinking them even for a few days, and in some instances critical periods, marked by great vital perturbation of the entire system, occur after their more or less protracted use.

The stomach and intestinal canal usually first manifest this disturbing effect; colicky pains or diarrhoea often follow within the space of an hour

after drinking the first glass. A general feeling of excitation of the nervous system, with an unsatisfying, restless, yet purposeless disposition to motion, is not unfrequently experienced even under a very moderate use of some of them for a few days. These symptoms are not by any means present in every case, but are experienced sufficiently often to justify their classification amongst the general effects of mineral waters, and suffice to prove beyond a doubt their perturbing potency. There are, however, certain of these waters, of which I shall speak when referring to them specially, that, on the contrary, produce on the system a decidedly quieting and soothing effect. Under their use the action of the heart is not unfrequently reduced several beats per minute, the brain and nervous system rendered more or less sluggish in their functions, and a general sense of lassitude and inaction induced.

While it is difficult to demonstrate the exact *modus operandi* of mineral waters, there can be but little doubt that some at least of the effects above mentioned are produced by an absorption of some of their constituents, in a more or less unaltered state, into the general circulation; and in the efforts of Nature to expel this foreign matter, whose presence in the living economy is felt as an intruder, the system is not only often relieved of the unpleasant stranger, but with it also the morbid agent which had previously held it in a suffering state; and this is in

all probability, the rational explanation of many of the cures produced by mineral waters.

On the other hand, there are doubtless cases in which these waters, present in the circulating medium, act as solvents, alteratives, or disintegrators of morbid structure in virtue of their presence in contact with it. That mineral waters, or any other agent, act chemically when introduced into the living economy is in my opinion subject to very grave doubts; for, under the dominion of the life-force, it is more than doubtful whether any chemical elements obey their laws of affinity. It may be asserted, as a general principle, that the laws governing these affinities hold intact the entire world of inorganic matter, giving it shape, form, color, and other qualities, but are arrested abruptly on the very threshold of organic life. From the gray lichen clinging to the crumbling wall up to the giant pine of the forest, from the infusoria sporting in myriads in a single drop of water to those gigantic forms of animal life that roam in undisputed dominion through Oriental forests, in all these material organisms, whilst held in living form, it may be doubted whether there can be found a single evidence of crystallized structure; yet no sooner has that mysterious principle which we call *vital* abdicated these forms than we find the full enthronement of the *chemical*, which, with the busy play of its mysterious agencies, at

once commences the demolition of the living structure.

We see this law written on every page of the voluminous book of Nature. The tiny coral zoophyte, sporting his brief existence in the tepid waters of the tropical zone, at his appointed time yields up his life to aid his kindred myriads in building up those dangerous reefs along our southern shores to which, whilst living, it did not contribute. The world of crustacea that lie deep down in the hidden chambers of old ocean's bed take from the saline waters around them their solid constituents, and by an inexplicable power endow them with life for a brief season, to cast them off again in circling layers around their living forms; and thus the house is built in which they dwell, but this house is, essentially, outside of the charmed circle of their mysterious life-force.

So also is it in the vegetable kingdom: from the air and dark earth the rose and tulip, and all the world of flowers, extract the material of their painted glory and hold it for a season in the living grasp of their floral period, but at the appointed time withdraw this mystical agent, and anon the gaudy petals lose their glowing hues; they pale and drop, and by chemical agency are quickly resolved back to the inorganic world whence for a brief period they were evolved.

Unfortunately for the deductions made from

experiments in organic chemistry, these experiments are, in almost every instance, made upon organic tissue after it has passed from under the dominion of the vital force, and therefore afford no reliable evidence in determining the question of living constituent elements.

The discovery of chemical compounds in organic tissue under these circumstances is perfectly rational; for, the life-force having fled this matter, chemical union takes place, constituent elements having affinity rush to the embrace of each other, and chemical compounds are necessarily the result. The stone that forms in the kidney or bladder, and the crystals that are frequently found in the gall-sac and liver, afford no positive proof whatever of the presence of chemical action under the dominion of the living organism; for the habitats of these chemical combinations are strictly and physiologically outside of the living economy, although mechanically within it, and are, doubtless, formed within these receptacles after their materials have passed from under the dominion of the life-force.

Placed under the objective-glass of a microscope, organic matter often exhibits forms of crystallization, but never when this matter still lives; hence the fallacy of such experiments.

IMPROPER USE OF MINERAL WATERS.

Whatever may be the specific mode of action of these waters upon the system, it is an undisputed fact that under their use many people do recover from grave and serious maladies. For centuries intelligent and observing sufferers from all classes of society have resorted to them, and have given their testimony to the benefit they have derived from their use after having tried in vain the *materia medica* of the pharmacist. That much of this benefit has resulted not so much from the use of the waters as from the ensemble of influences surrounding the patient whilst under their care is more than probable; but these influences are inseparable from the springs whence the water is drawn, and may, therefore, be recognized as constituting part of the curative agency there found. It is a fact that mineral waters transported in bottles or casks, and taken by an invalid in the quietude of his home, rarely produce the same favorable results as when taken on the spot whence they issue from Nature's hidden and mysterious laboratory; hence it must be inferred that much of their efficacy depends upon the *entourage* of the patient whilst undergoing their essay. The music, the singing of birds and the blooming of flowers, the pedestrian promenades, the pleasures of equestrian excursions, the drives through romantic and

shady forests, the constantly-changing panorama of new faces and costumes, the agreeable surprises daily experienced on meeting old friends and making new ones,—all play an important part in the process of cure, and are quite valuable adjuncts to the waters in producing the good results experienced at these places of resort. Whilst I would, therefore, counsel the invalid to indulge as much as possible in these agreeable distractions, I would also warn him against the danger of an injudicious use of the material elements of his medication at these places, however simple they may seem.

I have already stated that these waters, when taken internally, often produce decidedly distressing, and sometimes even alarming, effects upon the system; hence the propriety of a due regard to their known action, their adaptability to each physical constitution, and the character of each complaint for which they are taken. To this fact too much importance cannot be attached, for it is to be feared that not only many of the failures to obtain relief from these springs, but also many directly evil consequences to the patient, have resulted from errors of judgment or improper advice given on these subjects.

It may be confidently asserted that no patient suffering either from organic disease of the heart or large blood-vessels or fully-established and far-advanced tubercular phthisis should resort to any

of them for a cure, for universal experience has proven not only the uselessness of such trials, but their often dangerous and fatal results.

It is not an uncommon thing to see fond and indulgent parents, acting under some improper advice, bring their frail, feeble, and anæmic daughters to the drastic waters of Pullna, Kissingen, or Hombourg, and at an early hour of each day arouse and march them to the springs, and there drench their feeble stomachs with these exhausting waters until scarcely enough of rich red blood is left within them to tinge their pallid cheeks; and yet these parents may be heard to express great disappointment that, notwithstanding the most persistent assiduity in taking the prescribed number of glasses, their daughters not only do not improve, but actually grow worse, and complain of headache, ringing in the ears, palpitation of the heart, and, in short, a general train of distressing sensations even greater than those from which they have been seeking relief. Now, were these parents to reflect that waters useful in relieving the engorged liver of a gourmet or the hyperæmic and surcharged brain of an apoplectic subject could not, in their nature, impart strength and richness to impoverished blood, they would doubtless give their children good generous wine and awaken them in the morning to a nutritious beefsteak and a fragrant cup of coffee, rather than to their daily

walk to the springs that under a misguided judgment are sapping the very fountain of their lives.

In these anæmic cases, the result of mere impoverishment of blood, the stomach and entire alimentary canal are usually in a feeble and torpid condition, indicated by constipation and other functional derangement; and under the impression that this derangement is the cause of their feeble and exsanguious condition, rather than its consequence, such invalids are often subjected to this course of treatment with a view to its removal, whilst, in truth, every glass of the purgative taken, by spasmodically exciting the enfeebled and atonic stomach and intestinal canal, only aggravates the disorder by adding to their atony, and thus fixing upon them their morbid state.

For such patients a nourishing diet and a proper use of a ferruginous water, such as that of Spa or Schwalbach, which will impart a tonic and astringent action to the mucous and muscular coats of the enfeebled viscera, and thus arouse them to a more permanent condition of strength, is a vastly more rational treatment. There is another not unfrequent mistake committed by persons suffering from impoverished blood and general prostration to which I would here refer. Under the impression that iron directly imparts strength to the living economy, they have perhaps been told by their medical adviser or some other person having their confidence

that they need iron in their blood, and that this is the great desideratum in their case; and, hearing of the remarkable ferruginous qualities of the waters of Spa, Schwalbach, or some other of this class of springs, they make haste, at any sacrifice, to place themselves under their reputed fortifying influence. On arriving, they are struck with the wonderful ferruginous incrustations produced upon every object with which the water comes in contact; and, under the delusion that the human system is a sort of magazine of iron, they commence at once to drench themselves with the nauseating dose, and in the course of a three weeks' use swallow enough iron to thoroughly incrust (if such a thing were possible) their feeble and suffering stomachs.

If, before a resort to this treatment, such patients were capable of making a careful and scientific analysis of the constituents of the healthy human body, they could not fail to observe how small a quantity of this metal in their living organism is necessary to and compatible with the most perfect health; and with this knowledge before them, I doubt not, many would hesitate before making their stomachs the receptacles of so much useless and offensive matter. That there are cases where the presence of a slightly-increased quantity of iron in the blood will in some way impart vigor to the system there cannot be a doubt, and that this additional quantity may be, and often is, communi-

cated by the drinking of ferruginous waters is equally true; but, on the other hand, it is as much a verity that Nature, in her mysterious work of preparing a mixed diet of vegetable and animal matter for man, has generally stored away in and compounded with his daily food enough of this metal to serve its purposes in the living frame; hence the daily drenching of the stomachs of this class of invalids with these iron-abounding waters for the purpose of gaining strength, to the neglect of a good and generous diet of sound and healthful vegetable and animal matter, is not only futile, but dangerous. In most cases the beneficial effect of iron is not so much produced by ferruginizing the vital current as by its astringent and stimulating action upon the organic tissue with which it comes in contact, rousing it to greater powers of appropriating the food taken. There is yet another error frequently committed by a class of invalids who resort to mineral springs to which I would especially call attention; and I desire to do this earnestly, since I believe a frightful amount of evil annually results from a want of proper knowledge upon the subject in question. Quite a number of the annual visitors to these springs go thither in the hope of finding relief from some one or other of the forms of organic or functional disease of the kidneys or bladder, and of these quite a large proportion for relief from what is popularly known

as gravel, or small calcareous formations in the bladder, giving rise to difficult and painful micturition.

There is a widespread popular notion that many of these mineral springs, and particularly those of Vichy, Kissingen, Carlsbad, Contreuxville, Vittel, and La Preste, are sovereign remedies for these cases, and it is not without good reason that they have acquired this reputation; but it is questionable whether an ignorant use of these waters has not, in the aggregate, been productive of more harm than good to the promiscuous mass of sufferers who have resorted to them. No greater or more dangerous mistake can be committed by those suffering from organic disease of the kidneys than a resort to mineral waters for a cure, and even in cases of what are popularly known as gravel, without a knowledge of the true character of the cystic formation and the chemical quality of the water taken, patients are more than likely to have their troubles aggravated instead of improved.

Healthy urine is chiefly composed of water holding in solution certain salts and the débris of broken-down and worn-out animal tissue; but if, from any cause, the quantity of salts becomes unduly augmented or that of the liquid reduced, the excess of salts, no longer being held in solution, is precipitated in the form of solid matter, commonly known as gravel. Now, these deposits are usually either

acid or alkaline in their character, the former resulting from an excess of what is popularly called acidity in the blood, and the latter from an excess of alkaline qualities. These deposits may, for all practical purposes, be distinguished by their difference in color, the acid or uric deposit being usually of a reddish, and the alkaline or phosphatic of a white or greenish, color. These characteristics will generally serve, without other aid, to direct the patient to what waters he should resort, assuming that he has first ascertained their chemical qualities; but, unfortunately, this is not always the case. At each succeeding season a number of misguided persons suffering from alkaline deposits may be seen drinking from the waters of Vichy or other alkaline springs, believing that they may find relief, and for a while they are cheered by a flattering but false hope.

On examining their daily renal secretions they discover that they contain many small solid particles, and as they continue to drink they find the quantity discharged increase, and are thus persuaded that they are rapidly getting rid of these troublesome intruders; whereas the fact is, that by drinking daily of these waters they are so charging their blood with alkaline matter that it can only be removed by an increase of its secretion by the kidney and consequent deposit in the urine. Of course these errors can only be committed by neg-

lecting to consult an honest and intelligent physician.

One other remark upon this subject, after which I will leave it with my invalid readers for that consideration of which they may think it worthy. Seeing that medical men are neither infallible nor all honest, when you have tried a spring for any given malady a reasonable time and find your condition unimproved, you had better try another, notwithstanding the opinion of your doctor to the contrary. Do not trust too implicitly to what is called, in professional parlance, "crisis." It is true that mineral waters do occasionally produce a painful perturbation in the system which is followed by a greatly ameliorated condition of the patient, but these are exceptions, and it would be better to attend to the instinctive voice of Nature, which generally expresses in the *ensemble* of our feelings, either painful or pleasurable, her true state, and in so doing encourages us to persevere in that which is doing us good, or warns us to desist from that which is working harm. Much of the advice given to patients by the medical men stationed at these places, is, I regret to say, too often determined by local prejudice, and is not at times as conscientious as it ought to be; hence I greatly fear that much suffering is experienced, and unnecessary expense incurred at these resorts by those who cannot well afford it, through medical advisers urging their

patients persistently to experiment with the particular spring to which they are attached, when not only the first glass, but every succeeding one, is only injuring them.

WHEN AND HOW TO TAKE MINERAL WATERS.

In attempting to indicate rules for the drinking of mineral waters, it may be observed that the difference in individual idiosyncrasy or morbid physical conditions renders it impossible to give instructions for universal application ; nevertheless, a few general remarks upon the subject may serve as some sort of guide for the majority of patients who resort to them for a cure, and thus save them from painful, if not dangerous, experiences.

In the first place, the invalid, whatever his complaint may be, should not be in too great a hurry, after his arrival at the spring of his choice, to commence the use of its waters. He should thoroughly rest from the fatigues of whatever journey he may have made in reaching the place, and should endeavor, for a day or two, to ascertain from the best available authority what kind of diet and general *régime* is most compatible with the use of the waters he is about to take, and as far as possible conform thereto.

By general consent, the best time for drinking all mineral waters is in the early morning, when the body is supposed to have been refreshed by sleep and the stomach is entirely empty. On arriving at the spring the patient should begin with a small glass, drink it slowly, or rather sip it, in order that the stomach may not become offended by a too sudden dash of the new element upon its often sensitive mucous membrane and reject it at once, or entail upon him nausea and other unpleasant effects.

During the first few days of essay he should confine himself to the minimum quantity usually taken by patients of any class, and after having ascertained that his stomach will comfortably tolerate the fluid he may venture on larger quantities.

As a rule, whether he feels any inconvenience or not, he should take some gentle exercise after drinking, and allow at least ten or fifteen minutes to elapse before he partakes a second time. If, however, he has not been accustomed to exercise before breakfast, and feels any decided degree of lassitude or sense of fatigue, it will be better to seat himself on some comfortable bench, as near the spring as possible, and there, whilst regaling his eye and ear by the sights and sounds around him, slowly sip his appointed portion.

It often happens that pleasurable sensations, experienced either through the eye or ear, promote

digestion in the weak even better than the most gentle exercise, and hence this suggestion. The now almost universal custom of placing musical bands at the springs, although designed by the local authorities of these places simply to add to their attractions, subserves another purpose; for, in virtue of their enlivening strains, they often send back to their hotels or apartments ready and eager for a breakfast patients who would otherwise most likely have returned with an aching head, an oppressed stomach, and a degree of lassitude and want of appetite from which they would scarcely recover during the remainder of the day.

After having taken the quantity which experience and good counsel have determined proper, the patient should allow half an hour to elapse between the last glass and his breakfast, which meal should always be simple and nourishing. Tea rarely can be taken at breakfast by persons drinking mineral waters, but coffee, when properly made, seldom produces unpleasant effects, and is therefore preferable as a morning beverage. Finally, I would remark that cold mineral waters should never be taken into the stomach when the patient is overheated. The neglect of this precaution has often been attended with the most painful results.

THE BATH AS A REMEDIAL AGENT IN
DISEASE.

I do not propose, in the following pages, when describing the various springs of the Continent, to give particular instruction as to the use of the bath, believing, as I do, that, so far as the specific agency of mineral waters is concerned, their internal use is that upon which most reliance must be placed. Nevertheless, as the application of cold or warm water to the surface is a most valuable remedial agency in many cases of disease, I shall here attempt a brief outline of the general therapeutical application of the bath, in the hope that it may serve as some sort of guide for invalids in the use of the mineral waters of which I shall hereafter speak. If simple water, in its external application to the surface, is rarely absorbed by the skin—and this is a tolerably well-established fact—it is but fair to assume that mineralized waters are even less likely to enter the circulation in that way, and hence the reason for doubting this kind of agency ; but the effect upon the general system produced by the application of either cold or hot water, though not depending upon its absorption, does play an important *rôle* amongst curative agencies, and ought therefore not to be ignored in the treatment of many diseases. Cold baths act chiefly upon the system in virtue of the degree of refriger-

ation they produce and the shock they impart to the nervous system, and these effects, in their turn, very much depend upon the temperature of the water and the mode of its application. If applied very cold for any considerable length of time, the effect is exceedingly depressing. By the rapid and continuous abstraction of animal heat thus produced, the vital force of the surface vessels becomes more or less paralyzed, as is sometimes evinced by the pallid lips and bluish tint of the extremities in persons who have been too long submitted to its action. But cold water, applied to the surface for a brief interval, and quickly succeeded by gentle friction or a removal of the patient to a medium or higher temperature, has just the opposite effect. In this latter instance the sudden shock imparted to the capillaries and nerve filaments of the surface is, on the withdrawal of the refrigerating agent, followed by a more or less sudden rebound of vital force which sends a thrill of nervous and vascular excitement to the surface, resulting in a surcharge of its vessels and general activity of its dermoid glandular system, by which not only are internal congestions often relieved, but surface depuration greatly promoted.

This action may be kept up for a very considerable time, even in weak persons, by a judicious and rapid alternation of the refrigerator with gentle friction, or the application of a medium of higher

temperature to the surface; but if continued beyond the reactive power of the system, it will only do harm.

In the use of many of the forms of the cold bath, therefore, great care should be observed not to reduce the vital force beyond the power of prompt reaction in the surface vessels.

It is to be feared that the sudden deaths occurring from time to time in hydropathic institutions result from this too rapid and continuous abstraction of vital heat from weakened systems without awaiting the compensating stimulation or rebound of vital force; it is this latter effect that in the vast majority of cases constitutes the peculiar claim of the cold bath in the treatment of disease; and without it the cold bath, in whatever form, is not only useless, but decidedly injurious.

The action of warm water on the surface affects the vital economy in an entirely different manner. When applied at a temperature between 95° and 100° Fahrenheit, not only is the circulation invited to the surface by the law of calorific equilibrium, but, the gentle stimulation of warmth to the skin being transmitted to the brain and nerve centres, they become in their turn aroused to a more diffuse distribution of their force, which results in a greater flow of fluids to the periphery of the body and an increased activity of the surface organism generally.

Under this action the pulse is not unfrequently accelerated and the respiration slightly quickened, but the depurating function of the dermoid glands is also greatly increased. It may readily thus be seen how the warm bath will in instances of congestion of internal organs afford relief not only by diverting the circulation from the congested centre, but also by promoting the elimination of offending matter that may be found there lodged. But even the warm bath, however appropriate as a distributing agent of vital force, may defeat its object by being continued too long or applied at too high a temperature. If applied too hot—say about 100° Fahrenheit—it becomes a powerful stimulant to the heart and other great vital centres, which, under their aroused condition and the repellent agency of excessive surface heat, may determine upon an already suffering organ an afflux of vital force which may greatly aggravate its morbid condition. On the other hand, if too long applied to the surface, even at a moderate heat, it may do harm. The surface capillaries and sentient nerve extremities here again become paralyzed or perverted in their action, the skin shrinks, the mouths of the excreting vessels close and retract, and the fluids previously invited to the surface are repelled upon the internal viscera, and thus the partially-relieved organ may again become oppressed.

Vapor-baths are chiefly useful in producing in-

creased perspiration and in stimulating the surface vessels to greater detergent action. They are also useful in certain diseases of the skin, in consequence of the facility with which volatile substances intended as local alteratives may be combined with them and applied to the general surface; they are, therefore, valuable agents also, and may be most profitably used for these purposes.

The average daily loss of weight in a healthy man from ordinary perspiration is about thirty ounces. But under the influence of the warm-water or vapor-bath that quantity may be greatly increased, and under certain forms of the bath even to the extent of several pounds. Now, assuming that this loss of weight does not all consist of water, but is composed not only of the salts of the blood, but also of strictly organic or animal matter, it may readily be seen what an important *rôle* the bath often plays in the treatment of certain forms of disease in virtue of this action alone. There are many good authorities, however, who do not believe that noxious or effete organic matter is often, if ever, eliminated from the system through the skin. This I think an error, for it is a fact that the eliminations of mercury from the skin in a system charged with that metal are often such as to discolor other metals carried in the pocket of the person so saturated, and also that the odor of certain other substances which abound in a system may frequently

be detected in the exhalations from the skin. It is likewise a well-known fact that the malady under which a patient is suffering may often be recognized by a careful medical observer on entering the room where the patient is confined, even without seeing him.

If these be facts—and of their truth careful observations made in the wards of hospitals or lazarettoes where patients have been properly insulated and classified cannot fail to afford proof—organic matter is in this manner sometimes thrown off. These distinctly characteristic effluvia from the skin prove, therefore, that one of the functions of the surface portion of the organism is to assist Nature in ejecting matter from within that may be, if permitted to remain, injurious to the living economy. It will not be denied, I think, that urea is one of the ordinarily excreted agents from the surface; and urea is essentially as noxious an agent, when retained in the circulation, as any of the other forms of foreign matter. Though the theory that profuse perspiration in cases of disease is not an effort of Nature to get rid of offending matter is now a prevailing one in the profession, it may be inferred, from what I have already said, that I am not inclined to range myself with the advocates of this doctrine; on the contrary, I think, in the vast majority of such cases, this perspiration is an effort of Nature in that direction. That the profuse perspiration in rheumatic

or intermittent fever does not seem to relieve the suffering of the patients or shorten the duration of the malady may be admitted without invalidating this theory. Nor does the failure of profuse perspiration of hectic fever to relieve or cure the disease in cases of advanced tubercular consumption disprove this doctrine; it does, doubtless, generally relieve the temporary tension of the vascular system in the fits of fever occurring in this disease, and produces a degree of soothing influence during which the patient sleeps in comparative comfort. These exhausting fits of perspiration may well be interpreted as the struggling efforts of enfeebled Nature to throw off that which oppresses her rather than as the direct effect of any specific morbid agent acting upon the surface glands.

Upon this theory of elimination from the skin, the importance of the bath upon the common principle of dermoid stimulation at once becomes obvious in the treatment of many forms of disease. As the cuticular surface of man is constantly more or less exposed to innumerable impressions from without, we may fairly assume that it has been endowed with a power of resisting the action of these influences to the greatest possible degree, and experiment proves this fact. The most deadly poisons, either of animal or vegetable matter, may be applied to the skin without effect, and unless an abrasion of the cuticle is produced are rarely thus introduced

into the system, but it does not follow that this surface has also the power of resisting the elimination of matter from within; on the contrary, a careful examination of the anatomical structure of the entire dermoid glandular system seems to prove that depuration is one of its most important functions.

Whether standing in the relation of cause or effect science may not yet be able fully to determine, but the fact will not be denied, by any careful observer of protracted cases of continued fevers, that the first indications of improvement are usually coincident with a relaxed condition of the surface vessels, attended by gentle or profuse perspiration, and it is highly probable that if the perspiration of this period were collected and were capable of a strict analysis, there would be found in it traces of the contaminating agent as the first evidence of Nature's ascendancy in her struggle with morbid influence. Be this as it may, the doctrine I wish here to inculcate is that notions of the cuticular imbibition of specific agents from mineral baths should not seriously occupy the minds of patients resorting to them. For this purpose Nature has provided a better and more certain way, and that is by their internal use—the way in which all other agents designed to enter the domain of the living economy are usually introduced.

As adjuvants, however, in the treatment of dis-

ease, but always in the sense already indicated, baths are most valuable where stimulant mineral ingredients are known to exist in the waters used. Such waters are generally preferable to the simple warm bath, but in all cases they should be used with much circumspection, both as to duration and temperature; nor should the fact ever be forgotten that the effects of both hot and cold baths upon weak constitutions are often strongly marked and disturbing in their character.

Patients of a plethoric habit, or in whom there may be the slightest suspicion of disease of the heart or large vessels, should venture upon the warm bath very cautiously, and should discontinue it upon the first sensations of drowsiness or shrivelling of the surface, and in case of the cold bath when chilliness or oppression is induced. Indeed, with regard to the cold bath, I would not advise persons laboring under congestion of internal organs to resort to them under any circumstances, and especially would I counsel such patients to avoid the douche and shower-baths as being not only in many cases useless, but highly dangerous. In cases of a purely nervous character, of lowered vital status, without organic disease, a moderately cold bath, when judiciously applied, may be well recommended as a tonic and bracing agent; but even in these cases it must never be continued beyond the power of the vital reactive force.

CHAPTER V.

PULMONARY CONSUMPTION.

IN a previous chapter of this work I insisted upon the impropriety of persons suffering from advanced organic disease quitting their homes, or at least their native country, in the hope of being cured. Nevertheless, so undefined is the term "far advanced," so undeterminable the bounds of vital force in any case, and especially so hopeful are the subjects of tubercular phthisis generally, that I fear what I have said will deter but few of its subjects whose means will allow of their making the experiment.

It must be confessed that in all the domain of medicine, whether of allopathy, hydropathy, homœopathy, or any other system of cure, there is, and always has been, too much of a disposition to invest the healing art with a mysterious character assumed to be only comprehensible to the profession, and to leave the patient as much as possible in the dark, not only as to the nature of his disease, but also as to the intended therapeutical application of the agents prescribed for its removal.

In some instances this is doubtless wise and prudent, but in the great majority of cases of chronic disease this reticence on the part of the medical adviser is neither judicious nor safe; for sick people, if properly informed of the nature of their disease and the probable action of the curative agents prescribed for them, are generally much more likely to follow these prescriptions than if this information were withheld from them. Assuming, then, that this is a proper method of dealing with the subjects of this disease, I now propose to offer some practical suggestions upon its nature and treatment, and in this connection to indicate the climatic and other influences of the health stations of Europe best adapted to its cure.

It is probable that the true characteristics of this disease may at no distant day be so much better known, and the means of successfully treating it so much better understood, that it will cease to be the death-knell of so many cherished hopes and aspirations as it now is to those in whom its symptoms have been definitively declared to exist. But until such desirable knowledge is attained by the profession, medical men must content themselves with indicating to this class of invalids such facts as the present light of science reveals, not only as to its peculiar nature, but also as to the means upon which a faint, if not a reasonable, hope of cure may be based.

It is now, I believe, the generally-entertained opinion of the profession that tubercular phthisis is essentially a disease of debility. Although its development not unfrequently seems to depend upon a primary local irritation in the bronchial tubes or pulmonary tissue, induced by what is popularly known as a cold, yet most good authorities of the present day believe that, with the *vis vitæ* or vital force up to a par standard in any given subject, tubercular matter is rarely if ever either produced or deposited as a result of such influence. Cases of incomplete recovery from acute inflammation of the lungs, leaving as their sequel partial solidification of one or both of these organs, must be regarded as exceptions to this view of causation; but even in these cases there is almost always lowered vitality and an already partially-established cachectic condition.

Debility may be either congenital or induced, and may be in either case the predisposing cause of tubercular deposit under slightly exciting influences. In the vegetable world we often notice seeds taken from degenerate or unhealthy plants produce weak and feeble stalks and an inferior fruit, even when planted in the most favorable soil; whilst similar seeds taken from healthy and flourishing plants and placed in the same soil attain to the perfection of all their physical qualities. Every farmer or horticulturist knows this fact,

and acts upon it in his selection of stock from which to propagate. This degeneracy of product from inferior progenitors may not amount to an absolute physical defect at once recognizable in the plant or animal; on the contrary, it often happens that for a time the young plant or animal manifests all the qualities desirable and evinces a perfection of growth sometimes even astonishing, but at some given period later on in its development it will in the animal exhibit signs of weakness and a tendency to the disease from which the parent suffered, and in the plant an arrest of growth and the disposition to blight or mildew by which the parent stock was characterized. This, in the human animal, is what is known as "hereditary taint" or congenital weakness.

The same condition of either plant or animal may result to the healthiest stock, possessing *per se* the best possible transmitted type, from a series of deteriorating influences surrounding it, and to which it is more or less continually subjected; and this is what is denominated acquired diathesis.

Tubercular matter is now generally admitted to be an aplastic material resulting from either mal-assimilation of nutritive ingesta intended for conversion into animal tissue, or from effete matter which, having once performed the functions and passed through the cycle of organic life, is no longer fit for the purposes of the healthful living economy,

yet, from a want of vital force sufficient to throw it off through the depuratory organs, is retained in the general circulating system as matter inconvertible again into living tissue. When, from one or the other or from both of these sources, the living organism suffers, the result is the same—viz., lowered and enfeebled vital status and a failure in the building up of organic structure. When the life-force exists in a *par quantum*, under its harmonious play nutritious aliment is rapidly converted into healthy organized structure, which in its turn contributes to vivify and strengthen the whole economy, and as rapidly as the vital cycle dispenses with the elements of structural life its débris is hurried to the great vital scavengers, and by them ejected from the living economy; but if, from any cause, the life-force fails to perform this function, this inconvertible matter is driven in the common current, by the *vis a tergo* of the heart's action, throughout the living organism, like the sand and gravel borne on the descending wave of a mountain-torrent; and just as the débris of the cliffs and mountains, borne downward by the stream, finds a lodgment in the bottom of its eddying pools or in the crevices of its rocky bed, so this animal matter is deposited where the sweeping current of the life-giving stream is most favorable to its deposition; and in the whole material organism there is no place so favorable for this as the pulmonary tissue.

There is still another influence I would mention which in these cases greatly contributes to make this part of the living tissue the habitat *par excellence* of tubercular matter. By most physiologists the lungs are regarded as chiefly confined in their functions to the oxygenation and decarbonization of the blood, and this unquestionably is their great cardinal function; but it is not to be doubted that from them is thrown off in exhalation much strictly animal matter that by the subtle process of exosmosis finds an outlet through the delicate membrane lining their air-cells. The vesicular structure of these organs and the infinitely minute ramifications of the capillary system, that bear through them the life-current, freighted with its carbon and other effete matter, to exchange it for the vivifying oxygen, by what would seem to be a strictly vital process, renders them in a paramount degree liable to the invasion and permanent deposition of matter for the rejection of which the vital force may not be adequate; and this is doubtless the additional reason why we here most frequently find tubercular deposit.

As a proof of the correctness of this theory of deposit, it may be remarked that it is generally in the comparatively quiescent organs, such as the lungs, mesenteric glands, or other portions of the glandular system, that it is found after death, and

scarcely ever in an organ of much motion or great density of structure.

Such, then, is the nature of tubercle and the usual mode of its deposition ; and in view of these facts, it may readily be seen that such an inconvertible matter, permanently lodged in and constantly encroaching upon the structure of so delicate an organ as the lung, would sooner or later establish an irritation in its vascular tissue which would rapidly develop into inflammation and suppuration. It is thus, doubtless, that a process of disintegration of this important organ is established, which too frequently continues until the organ is destroyed and the life of the patient extinguished.

Upon the theory, then, that this is a disease of debility, and its destructive agency excited in the manner just described, the important inquiry is at once suggested, How may it be guarded against?

Of all the causes tending to the development of this disease, not even excepting inherited taint, I regard long-protracted and painful mental depression as beyond all doubt the most prolific. It has been my painful experience to have known many interesting persons who lived in the enjoyment of the most robust health until reverses of fortune or other calamities began to environ their moral horizon with clouds and darkness, and who from that period have indicated the sure and steady march of this insidious disease in their systems. The only

rational inference that can be drawn from such observations is, that during the prosperous and cheerful period of such lives, the *vis vitæ*, spirit, or soul, as it may be, like a well-tuned instrument played in harmonious measure, distributes throughout the entire living economy the proper measure of the life-giving current, but, once stricken with the paralysis of grief or despair, plastic life in harmonious measure is no longer produced, and tubercle—the abortive result of this function—invades its most favorable *habitat*, the lung; hence I regard a cheerful mind as first in the category of preventive measures.

With the above-given rationale of the disease and its causes, I am better prepared to make intelligible the sanitary measures I propose to recommend to its subjects, and before attempting to indicate the climatic influences best adapted to those who, either from inherited strumous taint or induced debility, are threatened with or already suffer from its incipient or latent symptoms, I would remark that it matters not how mild and equable the temperature of the locality they may seek, or how dry and bracing its atmosphere, or how bright its sunlight and balmy its breezes, if they carry with them sick and moody minds or find in the locality they may select a lack of that social life upon which a sound condition of both soul and body so much depends, they will fail to realize the desired benefit.

As a galvanic battery is the primal motor which sends forth upon the charged wire that subtle force which works such wonders in the physical world, so the sensorial brain is the great generator of that mysterious life-force which, flashing along the nerve-cords distributed throughout the body, imparts to the whole living mechanism functional life. Now, if, in consequence of depressing moral influence, this vivifying current be either languid or defective, the whole material organism in proportion suffers functional derangement, which frequently results not only in the arrest of healthful development, but also in disease.

With this view of vital agency, therefore, I cannot but regard it as a grave error to recommend a patient suffering from this disease to any sanitarium or health station whatever without first taking into account the influences that may be there found to minister to his moral nature. My own experience induces me to believe that patients are often consigned by their medical advisers to localities where the natural elements of air, water, diet, and temperature are well enough adapted to their conditions, but where the lack of social life and pleasurable distractions renders nugatory all the other health-giving influences of the place, and entails upon the patient only disappointment and regret.

The first element, then, in the category of remedial agents that I would recommend to persons

suffering from this disease is a cheerful mind, and probably the next in importance that of motion. It will not alone be sufficient to place the invalid under the most favorable climatic and social influences, for neither the uniform and genial temperature of the Nile, the bright skies of the Mediterranean Riviera, nor the equable and bracing temperature of some northern climates, with all the local comforts and adaptations to invalid life there to be found, will produce its best results if this be neglected.

It has been said that a consumptive patient ought to live like an Arab—"always on horseback"—and there is more truth than poetry in the saying. Motion is the ordained generator of life-force and the law of animal existence. In obedience to this law, young animals are instinctively impelled to constant activity. Every muscular effort and every new attitude of their muscular systems sends a current of plastic life throughout their organism, and thus contributes to the building up and solidification of their growing frames. If it were possible to confine the young of both the human and the brute animal to a strictly quiescent state during the period of their physical development, there can be little doubt that both would rapidly lapse into dwarfs or monstrosities.

It is well known to every educated medical man that, owing to the peculiar construction of the

venous system, a healthful circulation of the blood is almost impossible without muscular motion. Now, the skin, kidneys, lungs, and intestinal canal are the great depurient organs of the body, through which effete and noxious matter is thrown off from the system; and without a proper amount of exercise, promoting a healthful circulation through them, they cannot perform their functions well. The muscular system, whilst designed primarily for motor purposes, has, therefore, still another function to perform, and that is to assist the heart in maintaining equilibrium in the circulation through these important organs. Every time that the muscles of the lower limbs are set in motion the returning current of blood through the veins is assisted to ascend against the force of gravitation, and, in case of any tendency to the arrest of this circulation in the structure of the more quiescent internal viscera, muscular effort, demanding vital force, exerts a strong influence in diverting it from the internal congested organ, and thus relieves it of its oppressed condition. I might occupy larger space in indicating other and important functions of the living economy in which exercise plays an important part, but enough has been said to prepare the invalid reader for an appreciation of the remarks I may hereafter make upon motion as a directly remedial agent in the treatment of this disease.

The next subject to which I would here direct attention is the atmospheric and climatic conditions most favorable to the practical application of this agent. A great variety of opinion prevails, even amongst well-informed medical men, upon this subject, some advocating a warm, dry atmosphere, others warmth with more or less humidity, and still others a dry, cool, and uniform air. It will be sufficient here to remark that for certain forms and stages of disease of the lungs each and all of these opinions may be justly founded; but as tubercular consumption is not a disease to be caught from the passing breeze or cured by atmospheric inhalations alone, the abstract question of the air the subject of it should breathe is, after all, only one of a series of influences that must act co-ordinately with others, and ought not to claim the only consideration of a consumptive subject in determining the place of his residence.

As the vital condition of no two persons, in either health or disease, is exactly alike, it may be readily seen that only by a personal examination of each and every case of this disease could specific instructions be given; and as this is impracticable in a work written for the invalid public, I shall only here summarily repeat my remark that no locality, however inviting otherwise, can be well adapted to a residence for a consumptive patient if it do not permit of free exercise in the open air, and that

almost any locality where this can be comfortably enjoyed, combined with a cheerful mind and without encountering malarious or other poisonous atmospheric influences, may be trusted to involve all the other important conditions of a good climate. An atmosphere that invites the invalid out of doors generally invites to exercise, and exercise involves a general distribution of vital force, which in its turn again stimulates the functions of the skin and other depurient organs.

All localities possessing a mild and temperate atmosphere are not, however, equally good resorts for consumptives. Sheltered and tortuous valleys, or localities lying under the immediate base of projecting heights and shut off from wind-currents, however genial their temperature, are not usually the best places for this class of invalids. Air, like water, from mere lack of motion, may become vitiated and impure; it may not only cease to be properly vivified by fresh currents of oxygen or ozone, but from mere quiescence may come to hold in ethereal solution decidedly noxious elements; hence simple protection from wind-currents is often a less valuable condition to the invalid than the vitalizing character of the air he breathes and the winds that blow upon him.

Indeed, the vast majority of invalids suffering from not only phthisis, but from all other forms of chronic disease, as a rule feel better when

inhaling a fresh, mild atmosphere in motion than when breathing stagnant air; and were it possible to find a locality free from miasmatic influence and of proper temperature, far removed from high mountain-barriers, yet sufficiently undulating to give variety to the wind-currents and be picturesque and pleasing to the eye, this might be regarded, as far as physical influence is concerned, as the perfection of a resort for invalids.

If it were possible, indeed, to have the proper kind and quantity of exercise at sea, and to obviate sea-sickness and the other great discomforts of ocean-sailing, there can be little doubt that a protracted sojourn upon tropical waters, where unbroken currents of genial winds continually sweep and vivify the broad expanse of ever-restless waves, would work infinitely better results to the class of sufferers now under consideration than the best-protected sanitarium found anywhere upon the land. But, unfortunately, the sea will not admit of a comfortable dwelling-place for the invalid, neither is life upon it sufficiently varied to long entertain the mind agreeably; nevertheless, the good effects so often derived from protracted sea-voyages in fine weather, despite these objections, prove beyond a doubt that genial air constantly in motion, so far as its physical effects upon the system of an invalid are concerned, is greatly to be preferred to the air of the most sheltered and

protected nooks, for it is more than probable that the good effects resulting from a sea-voyage depend more upon the vivifying influences of the free and uncontaminated air of the ocean than upon any specific agent it contains.

Upon this subject of selecting a residence for the victims of pulmonary disease generally, I would therefore advise them, unless suffering from its latter stages, to avoid as much as possible those too-closely-confined valleys and narrow esplanades which lie immediately at the base of great mountain-heights, and to seek rather the more open country, where gentle winds play amongst undulating hills and Nature tempts to a moving life in the open air. Of course I am not here intimating that any paradise for invalids can be found combining the highest state of social life, freedom from malaria, and remoteness from snow-capped heights or the stagnant air of deep mountain-gorges, but only attempting the portraiture of such physical conditions of a sanitarium as should serve as an approximate standard of excellence for those who seek relief from this disease amongst the propitious elements of Nature.

For the practical purposes of instruction the sufferers from this disease may be divided into two general classes—viz., those who are experiencing its incipient symptoms, and in whom neither active inflammation nor suppuration has been developed,

but in whose lungs the process of tubercular deposit is going on in consequence of a depressed vital condition; and, on the other hand, those in whom suppuration has already been developed, and who suffer from hectic fever, night-sweats, and the other symptoms of advanced local lesion.

For the former class a much more active life is not only advisable, but absolutely necessary; and to those of this class who visit Europe for health I would recommend no one special locality whatever as a permanent residence, but, on the contrary, a constant change of scenery and sort of nomadic life. During the hot summer months a tour amongst the Alpine scenery of Switzerland or the high ranges of the Pyrenees may well be recommended for those in whom strength and general health have not been seriously impaired. The grand, wild, and varied aspects of towering mountain-heights, deep, dark gorges, and smiling valleys that these regions afford instinctively tempt to an adventurous exploration by which every muscle of the body is brought into active exercise and the chest inflated and expanded with a pure air highly charged with vivifying oxygen.

I would not, however, advise the consumptive, whatever his condition, to attempt to scale the peerless heights of Mont Blanc, the cradle of the avalanche, or to seek to pay his devotions at the icy shrines of the "Jungfrau," "Grundenwald,"

or 'old "Wetterhorn." Grand, glorious, and inspiring as are these cloud-built temples of Nature's worshippers, the atmosphere of their snowy aisles is too chill and sharp and the approach to their icy altars too rude and difficult; but lower down amongst these Alpine heights a world of valley and mountain scenery, picturesque and beautiful, invites to healthful exploration. From the high valley of the Engadine down to the smiling banks of Lake Lemman, from Zurich to Bellinzona, from Lucerne to the Italian lakes, and throughout the vast assemblage of forest-clad heights and smiling valleys that environ Interlachen, there is to be found a variety of natural scenery scarcely equalled in the world for interesting excursions.

The intelligent and inquisitive reader may naturally be supposed to conclude that these are trite remarks and interest only the common traveller for pleasure. To this I would reply that on the contrary they have a most important significance for the invalid. I have already ventured the opinion that exercise in the open air is one of the most efficient agents in the arrest and removal of tubercular deposit, and further that a cheerfully-entertained mind is almost indispensable to that result. Now, just here, amongst these Alpine heights, has Nature combined conditions peculiarly adapted to secure both these objects. This wild, weird, novel, and exciting scenery tempts to its

exploration as does scarcely any other locality in the world, and, from the infinite variety of its topographical features, the exercise involved in this exploration must be of that kind which brings into play every muscle, ligament, and tendon of the frame, thus producing a general distribution of life-force throughout every portion of the body, and in this manner breaking up those local congestions which so often are found to exist in connection with lowered vital status and tubercular deposit. It also acts as a powerful stimulant to the functions of the skin, liver, and kidneys, by which the lingering *débris* of effete or malassimilated organic matter is thrown off from the system, and at the same time creates an instinctive demand for renewed vital force, as evinced by the generally increased healthy appetite and the tranquil character of the sleep induced by a day of such fatiguing motion.

But it is through the medium of the sensorial nerve-centre that an Alpine summer sojourn will probably exercise the most beneficial influence upon the subjects of incipient phthisis. The endless, ever-changing aspects of Nature that there greet the wandering senses of the invalid are potent agents in arousing dormant energies and investing them with new life-force. Standing amongst the grand assemblage of Nature's giant forms, his ears may be greeted by sounds ranging

in magnitude from the thundering roar of the falling avalanche down to the herdman's-horn as homeward he calls his mountain-flock, or the still less distinct hum of human life as it comes faintly up from the busy crowds that throng the valley-towns far beneath his feet. There, too, his eyes may gaze upon the golden throne of old Mont Blanc, surrounded by his snow-crowned court, as in the fading light of day they bid adieu to the parting sun. Or, turning his steps elsewhere, he may look in mute and almost loving admiration upon Staubbach's bridal-veil of fleecy spray as it gently undulates beneath the mountain-zephyr's breath, or, if so inclined, may study with an artist's eye the myriad cascades of the lovely vale of Lauterbrunnen as they leap from their mountain-homes in ever-changing and fantastic form. This variety of sight and sound, so unique, so new and fresh, bursting upon the sensorial nerves of an intelligent invalid, and through them impressing his æsthetic soul, will generally awaken within him an element of agreeable surprise that will in its turn send flashing back along the nerve-cords of his body a wave of vital force and pleasurable emotion in its nature calculated to arouse the machinery of his physical system and assist it in building up an organism attuned to the enjoyment of the inspiring source. This is æsthetic medication, I confess, and will not admit of any

demonstrable explanation; but neither will the principle of life nor the phenomenon of death, and yet they are both facts.

Finally, I would say to all of this class of invalids, Avoid, during the summer at least, all kinds of mineral springs, no matter how boasted of their waters may be; eschew the doctor and all kinds of drugs, and go rather amongst those giant forms of God's creative hand; obey the rational laws of health in eating, drinking, and sleeping; and, if strength will permit, plunge into those valleys and deep gorges, climb the steep mountain-sides (avoiding always those high, inhospitable regions already named), pass incessantly from the explored to the unexplored, and thus each day regale both your eyes and ears with new sights and sounds, inspire the pure mountain-air, refresh your physical frame each day with a good nourishing diet and each night with a proper amount of sleep; keep constantly in a nomadic state, but never to the extent of excessive fatigue or disagreeable frequency of change; avoid installing yourself in any one locality for specific curative purposes until you tire of it. Remember, if you are to be cured at all, the cure must come from within you; it must be built up by Nature's crafty hand, aided by the influences already described—viz., cheerful society, pure air, a good nourishing diet, and free exercise under the canopy of the skies. But exercise that is not

entertaining is little better than none at all; no stereotyped walks or formal and prescribed promenades will subserve this purpose. Mere motion for the sake of motion is only fatiguing without being profitable. The confirmed invalid, confined to the area of his own garden for his daily exercise, if compelled to perform the continual round of its labyrinthian walks and tortuous paths, denuded of plant or flower, would soon tire of it, and would really fail to be benefited by it; but if at every step and turn some opening flower or ripening fruit greeted his eye, or some new phenomenon of insect or floral life invited and occupied his attention, he would daily return to his chamber refreshed and invigorated, not only by the muscular exercise, but by the agreeable entertainment of his mind.

All through the great ranges of the Apennines, the Alps, and the Pyrenees the same scenery, more or less modified, may be enjoyed, and the same influences secured; the invalid need not, therefore, fear too narrow an area for these mountain-experiments, even if they should extend through several seasons.

Within the last few years it has become the vogue to send the subjects of grave pulmonary tubercular disease, during the summer months, to elevated mountain-stations expressly fitted up for the reception of invalids, and upon the theory that there are certain lines of altitude above which tu-

bercular consumption is rarely if ever developed, far-advanced cases have not only been ordered to these high regions for the summer, but have actually been shut up in some of them through the dreary and tempestuous winter months. That the mountain-air of these stations, during the summer months, produces salutary effects in some such cases there can be no doubt, but it is to be feared that they are very rare.

There are many cases of this disease unaccompanied by its graver pathognomonic signs, yet where flesh and strength have so signally failed as to unfit the sufferer for the nomadic life I have already recommended, and for them a summer residence in some of these pleasant mountain-resorts is infinitely better than a stay at any of the springs or stations of the valleys of Germany or France. But that this or any other class of phthisical patients should be recommended to any of these high stations for the winter is to me, I must confess, incomprehensible. It is well known that even during the summer months the temperature of the higher mountains is variable and capricious, and that in the winter not only does the extreme cold prevent free out-door exercise, but it compels the native inhabitants to shut out from their dwellings every breath of fresh air in order to keep warm, and consequently to inhale the atmosphere of their badly-ventilated apartments, which in itself is a

sufficient objection to this kind of a place for an invalid whose blood requires the vitalizing effect of pure air. -

It is also a known fact that during the winter the ascending atmosphere from the warmer plains and valleys below, becoming chilled and condensed in its ascent, often enshrouds these higher altitudes with a cold, damp vapor extremely trying to the entire vital organism, and especially to the respiratory organs. Were it for no other reasons than these, they alone ought to be sufficient to deter invalids of this class from trying such localities in the winter, however comfortable they could be made otherwise.

For those whose general strength will not admit of a moving nomadic life amongst the hills, I shall now briefly mention some of the more favorable mountain-stations at which they may reasonably hope to experience not only comfort, but benefit, during the hot summer months, counselling them, however, by all means, at the first approach of cold weather, to come down to a more genial atmosphere, where they may enjoy a wider range for free exercise and the attractions of a more varied social life.

Starting from the ranges that dominate the Lake of Geneva, Glion, immediately above Montreux, may be first mentioned. It stands on an elevation of about three thousand feet above the sea, and is

well supplied with comfortable hotel accommodation, where not only the necessities of life, but also the luxuries of the season, may be had. The scenery of the eastern end of the lake from this place is charming, and the immediate surroundings are of a very agreeable character.

St. Cergues (another station at the west end of the lake) stands at an elevation of about thirty-five hundred feet above the sea-level. From this place in fair weather the great Mont Blanc range may be seen as from scarcely any other point in Switzerland. Very good lodgings and accommodation may also be had here during the season, and many short and pleasant excursions made.

Chambéry is another station, situated at the base of the Dent du Midi, at an elevation of about thirty-five hundred feet. It may be approached by a drive of about nine or ten miles from the Mouthey station of the Rhine Valley Railroad. Excellent accommodation will here be found, and many delightful excursions may be made amongst the immediate environs.

In the Diablerets district I may mention Lepey, at an elevation of three thousand feet; Comballel, at forty-four hundred and sixteen feet; Ormund Dessus, at thirty-eight hundred and forty feet above the sea-level. At the first mentioned of these places there is a very comfortable boarding-house, and at the last a tolerably good hotel. There are

in this district several other hotels and boarding-houses picturesquely situated, where invalids may be comfortably lodged and cared for at very moderate rates.

Engelberg, situated in a pretty valley on the north side of the Litlis, is now a place of considerable resort; its elevation is about thirty-three hundred feet above the sea. The surrounding scenery and the good hotel accommodation attract many visitors here during the summer.

Grindelwald and Lauterbrunnen, near Interlachen, are both cool and pleasant summer resorts of moderate elevation, where good accommodation may be obtained at very reasonable rates.

There are several other stations in this region, such as Murren and Little Schiedeck, but, from their great altitude and the difficulty of their approach, they ought not to be recommended to very sick people, notwithstanding the fact that they are surrounded by the most imposing of Alpine scenery.

Probably the most popular of Alpine resorts at the present time is St. Moritz, situated in the valley of the Upper Engadine, at an elevation of six thousand feet above the sea. The popularity of this place depends more upon its mineral waters, however, than upon its climate. Its atmosphere during the midsummer months is dry and bracing; but, in consequence of the great difference in temperature between the day and night, it cannot be recommended as a safe

station for persons affected with either bronchial or pulmonary disease. Of its waters I shall not here speak.

Pontresina and Samaden are both villages in the High Engadine, where plain but substantial fare may be had during the brief season of summer resort, which never exceeds three months ; but, for the reasons already assigned, and the additional fact that there are frequent cold rainfalls and chill, frosty nights even in midsummer in this high valley, I would advise all subjects of pulmonary disease to avoid making it more than a passing visit. Indeed, as the reader has doubtless already observed, I do not believe any station of so great an altitude is well adapted to the cure of an advanced form of bronchial or pulmonary disease, but there are, lower down in these mountain-ranges, sheltered localities where the atmosphere is neither too warm and relaxing nor of the chill and variable character found in those regions that hide themselves in the drapery of the clouds.

Among such localities I may mention Bormio, on the Italian side of the Stelvio pass ; La Presde, in the valley of the Poschiavo ; St. Dalmas, a few miles within the Italian frontier, on the high-road leading from the Riviera to Turin ; and Mount Doré, located in the high valley of the Dordogne, in France.

There are also, in France, Remermont and Guard-

mer, in the same district, both suitable places for a summer residence, being sufficiently elevated to secure a cool, bracing air and freedom from the relaxing influence of intense summer heat.

Of course I do not here recommend these resorts on account of their mineral waters, but simply as places for a summer sojourn amongst the hills. Many other such spots amongst the high hills and lower mountain-ranges previously enumerated might be recommended as safe and agreeable resorts; but, as the choice is so varied and the summer season so pleasant almost everywhere among these elevated situations, I shall leave to the invalid the choice of locality, only advising him to secure, in combination with a pure and bracing air, a first-class *cuisine*, where good and properly-nourishing diet may be well cooked and well served: this constitutes the great *vis medicatrix nutritionis*, which, in the cases now under consideration, should never be neglected.

The foregoing recommendation of sanitary measures for the subjects of incipient pulmonary consumption brings me to the consideration of those best suited to the second class of sufferers from this disease—viz., those in whom it has so far advanced as to be attended with hectic fever, night-sweats, excessive cough, and purulent expectoration, the obvious signs of suppuration and structural disintegration. For this class I would recommend a

régime differing essentially in some particulars from that recommended to the one previously named.

In addition to the depressed vital condition of the former class, those now under consideration suffer from an open local lesion of structural tissue, which must claim equal consideration with the constitutional condition, and for such the primary object to be secured is the arrest of the suppuration and process of disintegration, so threatening to the integrity of the lung and so menacing to the life of the patient. To recommend to such invalids an active and adventurous life amongst the varied scenery of high mountain-ranges; or to advise the inhalation of brusque currents of cold air, could not fail to produce an injurious effect. They should, on the contrary, lead a comparatively quiet life and be surrounded as much as possible by cheerful moral influences, an atmosphere of a mild and uniform temperature, and supplied with good nourishing food. And just here I would venture the suggestion of what, after much careful observation, I am convinced constitutes a most important adjuvant to these influences. As the disintegration and breaking down of organic tissue in these cases is the result of the rapid combustion that takes place between the inhaled oxygen and the carbon element of structural tissue, the obvious indication is to supply this carbon, in a free state if possible, and thus

divert the process of disintegration from the organized structure; and for this purpose I know of no form in which it can be so successfully introduced as that of alcoholic drinks. They are, as a rule, the most palatable; they impart gentle stimulation and arouse the æsthetic nature as no other carbonaceous matter does. I confess they are open to the objection of endangering the formation of habits of intemperance, but in advanced cases of this disease I have rarely known this to be the case, and I am convinced that I have seen at least many days added to the lives of such invalids by the use of these beverages without this evil consequence. By a wise law of Nature, that which subserves a needful purpose rarely demoralizes if indulged in under the stress of necessity, and in these cases of rapid disintegration it would seem that the toxic effect of the alcohol is more or less lost in the process of combustion in which its carbonaceous principle plays so important a part.

CHAPTER VI.

WINTER STATIONS FOR CONSUMPTIVE PATIENTS.

THE science of climatology is now receiving at the hands of able minds a degree of studious investigation never before given it, and the influences determining isothermal lines, wind-currents, barometrical pressure, and humidity of the atmosphere are at the present day much better understood than at any previous time.

These physical conditions, in their relations to disease of the respiratory organs, are also receiving from medical scientists a degree of careful analytical investigation that promises much practical good, and will doubtless lead to the abandonment of many of the crude and erroneous theories that hitherto have only worked evil to the credulous believer in the curative virtues of the drugs and nostrums too often prescribed by both regular physicians and unscrupulous charlatans. As I have already said, I do not believe phthisis pulmonalis to be an incurable disease if properly managed during its earlier stages; but this man-

agement must aim at an endowment of the life-force with the powers of appropriation and plastic assimilation of nutritious elements by a thorough and well-sustained change of all the sensible and insensible influences that surround the subject, and this in many cases may be accomplished by the means already indicated.

RIVIERA.

The north coast of the Mediterranean, extending from Hyères on the east to Malaga on the west, embraces nearly all the territory suitable as hibernating stations for consumptive invalids on the Continent. Within these limits Nature has not only been prodigal of the picturesque and beautiful in her topographical arrangement, but she has endowed these shores with a genial mildness of climatic influences most favorable to animal and vegetable life.

The crescent-formed portion of this coast-line known as the Riviera is now a most popular winter resort for persons suffering from this disease. Bathed by the waters of a tideless sea at least twenty degrees warmer than those of the Atlantic Ocean, and sheltered by high mountain-ranges from the northern blasts that in the winter sweep down across the Continent from the north polar seas,

the health stations of this shore-line enjoy a winter climate which for mildness of temperature and adaptation to the comfort of invalids is scarcely equalled within the same lines of latitude anywhere on the face of the globe. When, by a glance at a map, we see that this slip of territory lies within lines of north latitude corresponding with the extreme northern limits of Minnesota, the mildness of its winter climate becomes surprising. Much thought has been expended and many ingenious theories advanced in explanation of this fact, but I must confess that to my mind no one of these theories is entirely satisfactory.

Whether the high temperature of the Mediterranean waters depends upon the deflection of polar currents by the rocky barrier at the Straits of Gibraltar, the known tendency of an inland sea to equalize the temperature of all its coasts, the protection its mountain-ranges afford, or the direct agency of the sun's rays pouring down through a cloudless sky upon this great inland basin, is a problem not yet, I think, entirely solved. It is probable they all contribute to produce the result, but neither singly nor combined are they sufficient to account for the peculiar mildness of the winter climate along these shores. It is more than probable that electric agency plays an important part also in determining both the thermometrical and hygrometrical conditions of this region. Whether the

imponderable agents of magnetism, galvanism, and electricity are but different manifestations of the same agent, I shall not here stop to discuss, but for the present purpose shall assume to group them under the one generic term of electricity, and speak of them as such.

Notwithstanding the weight of evidence in favor of the animalcular theory of the lights seen at night in the wake of a vessel at sea, I am inclined to the opinion that this is but a peculiarly-modified electric phenomenon. It certainly is a fact that in many places on our southern coast a train of glowing scintillations may be developed at will by rapidly passing the hand through the tepid sea-water near the shore, which in their character and mode of development strongly resemble the sparks emitted by brusquely rubbing the back of a cat in cold weather in a dark chamber. It is a well-known fact, witnessed by every sailor, that there are certain localities where this phenomenon is more uniformly observed than in others, and further that these luminous manifestations are generally seen, if not in connection with sea-water more or less warm, at least under temperate atmospheric conditions. In the Caribbean Sea, the Gulfs of Mexico and California, and in the South Pacific waters these luminous coruscations in the wake of a vessel under rapid motion on a dark night often glow with intense and surprising splendor, whilst amongst

the colder waters of the polar regions they are of comparatively rare observation.

On the waters of the Mediterranean, within the limits heretofore mentioned, these globes and scintillations of many-colored lights on a dark night may be seen in great splendor, playing in the wake of a vessel in rapid motion. Now, assuming that this is an electric phenomenon, and that the facts just stated with regard to the conditions of its manifestation are proved, it does not yet follow that the presence of this agent in these waters is a factor in the production of their temperature. It may be, indeed, that their thermal condition, induced by other causes, in some manner acts as a developing agency of this principle, instead of being dependent upon it.

Interesting as this inquiry might be, the limits and object of this work will not admit of an investigation of the subject; and the relevancy of the suggestions already made can only be claimed upon the ground that they may, if found to corroborate other apparent phenomena of this agent, strengthen the arguments in favor of this and similar climates as suitable winter sanatoria for subjects of disease of the respiratory organs.

That hygrometrical phenomena greatly determining climatic peculiarities often depend upon this agent I more than suspect; and, whilst admitting that the physical influence of high mountain-ranges,

in connection with prevailing wind-currents, does modify the conditions of the atmosphere in certain localities, rendering some entirely rainless and others the *habitat* of aqueous vapors and the seat of almost constant precipitation, I am still inclined to the opinion that electric agency is a much more potent force in the production of these conditions than is generally supposed.

What ordinary observer has not, from his youth up, remarked during a summer rain-storm, whilst the heavens were hung in blackness and the clouds seemed to be struggling in an effort to discharge their liquid freight, that a sudden flash of lightning and a loud detonation of thunder have been instantly followed by a descending torrent of rain, which up to that instant seemed to be held back by some mysterious force? Again, how often do we see the sultry, oppressive heat of a summer day changed to a cool and refreshing atmosphere after a heavy thunder-storm, without any perceptible change in the direction of the wind! And again, how instinctively do we exclaim, when suffering from a close, suffocating, summer heat, that we are about to have a thunder-storm! and when the storm does come, how often do we find that its electric phenomena bear a direct ratio to the previously-felt oppressive heat of the atmosphere!

Now, whatever other agencies there may be at work in producing the atmospheric conditions just

named, it is absolutely certain that electricity is wonderfully involved in the phenomena, and strongly presumptive that from some occult aërial action of this agent atmospheric heat is evolved. Upon no other theory than that of electric agency can we so well account for the fearful tornadoes that from time to time sweep over narrow belts of country with margins and termini so sharply defined as they sometimes are. These great wind-storms are generally accompanied by great electric disturbance, and descend in apparently the most capricious manner upon tracts of country, laying prostrate forests of sturdy trees that have withstood the blasts of previous centuries. Admitting that it is some mad current of the upper air careering along in tempestuous flight that suddenly drops to the lower strata to carry destruction on its path, what agent diverts this destroyer from its upper flight? The theory of a vacuum in the sub-currents and a sudden rush of the higher air to supply it will not suffice. The bounds and limits of the hurricane are often much too sharply defined, and its force of too gyratory a character, to explain upon this theory such violent actions of so elastic and diffuse an agent as atmospheric air uncontrolled by some other force which for the moment sets at defiance the ordinary law of aërial compensation.

Careful observation has shown that, where other

physical influences are equal, the amount of rainfall is increased as we approach the equator, whilst the number of rainy days diminishes. In other words, rainy days are less frequent, but the amount of water precipitated is greater, as we approach the equator. This fact would seem to bear significant relation to the electric phenomena of these regions. The sensible and violent manifestations of this fluid are always more striking and decided in intertropical regions than in the more temperate, as are also the hygrometrical conditions of the atmosphere; and both bear a close relation to each other. So, also, in the regions lying between the tropics and the poles do we see the same relations, yet producing a different class of phenomena—that is, less electricity and less rain, but more rainy days.

On the continent of Europe, above fifty degrees north latitude, thunder-storms are of comparatively rare occurrence; yet the number of rainy days greatly exceeds that of the Mediterranean coast, but the rainfall is usually of a very different character. In Holland, Belgium, and North Germany the transition from a clear and cloudless sky to that of a complete obscuration of the sun and a gentle fall of rain from lead-colored heavens often takes place within the space of a few minutes, and without any obvious assemblage or concurrence of observable passing clouds, but ap-

parently by a quick and subtle process of condensation of atmospheric vapor; which cannot be accounted for on the principle of drifting refrigeration, but would seem to be the result of a diffuse electric presence in the upper air, acting in some yet unexplained manner upon the particles of vapor it contains.

These digressive remarks, taken in connection with the subject now immediately under consideration, are, I confess, of little practical importance, and may for the present be justly assigned to the domain of speculation; yet they may not be without value in future and more critical research into the influences that affect the climate of this particular region, as well as those which determine the eccentric range of isothermal lines and hygrometrical peculiarity so often observed elsewhere. Science is almost daily discovering some new attribute or mode of action of this subtle and all-pervading fluid, and it would not be astonishing to me if in the near future not only the earth's polarity, but the calorific agency of the sun's rays, the movement of wind-currents, and the precipitation of aqueous vapor, were all discovered to be more or less determined by it. But, leaving this subject to be determined by more able scientists, I shall now attempt a brief description of some of the more popular winter stations of the Mediterranean basin, with such remarks on their sanitary qual-

ities as I believe them to merit, purposely avoiding all allusion to the various opinions expressed by the able medical authors who have written upon them.

NICE.

This, the most popular of the Riviera health stations, is situated on the Mediterranean coast, between Cannes and Mentone, and has over forty thousand inhabitants. It is built upon a plain of about three miles' breadth, running back from the sea to the base of a range of hills, the more immediate of which are of moderate height, well wooded, and of gentle ascent; behind these a series of broken ranges rises in irregular gradation until it acquires a height of about four thousand feet. These higher ranges of the Maritime Alps encircle the town on all sides, excepting on the sea-front, but, from their distant position and the low altitude of the intervening hills, they do not afford complete protection from the northerly winds. There is also a wide valley, through which the Paillon flows from the glacial regions of the Col de Tende, which constitutes an important break in the projecting chain of this amphitheatre, and through which the mistral descends upon the plain below at certain seasons with most disagreeable effect. The winter climate of Nice may

be said to be warm, dry, and stimulating, the mean temperature being about 49° Fahrenheit, and the average annual rainfall twenty-five inches, distributed over about sixty rainy days. With the exception of these days, the skies are generally clear and of a beautiful cerulean tint, the sun warm and genial, and the general atmospheric effect bright and cheerful. Nice, however, must be considered as too much exposed to strong wind-currents to be a proper place for aggravated forms of pulmonary disease, and especially if attended with bronchial complications.

As before stated, the conformation of the protecting heights does not by any means secure immunity from these currents; on the contrary, when the wind blows down from the mountains on the north-east, and especially if they be covered with snow, it brings with it an atmosphere both cold and penetrating, and not unfrequently whirls the loose white sand of the soil in disagreeable blasts throughout every thoroughfare. Nor is this the only objection to Nice as a health resort for the class of invalids above mentioned. Over this plain, stretching from the hills to the shore, there is a daily alternating current of air. During the morning it usually comes from the sea freighted with the warmth of the African coast; but in the afternoon, when the sun sinks behind the mountain-heights, this current is reversed, and blows down

from the icy heights of the distant glacial region, carrying with it a temperature greatly below that of the morning, invading the whole town, and remaining there until the next morning's sun invites the returning sea-breezes again to temper and warm it. This difference between the temperature of the morning and evening, being so great, renders Nice an unsafe place for very weak persons suffering from almost any form of disease. It will be observed that the mean temperature here is almost exactly that of Mentone; but I would remark that the annual mean thermal condition of any given place is of much less importance in determining its virtues as a residence for invalids than is the mean diurnal range of the barometrical and thermometrical scale, for it is generally the sudden and brusque changes of atmospheric condition that prove most trying to weak and delicate constitutions.

Yet, however objectionable this place may be as a residence for grave cases of pulmonary disease, it may be regarded as well suited for a winter residence for sufferers from its primary symptoms. The object to be accomplished in this class is to arrest, if possible, tubercular deposit and promote the absorption of any such matter as may have already formed in the lung, and for this the usually clear sky, bright sunlight, extensive and pleasant promenades, and the wide range for extended

excursions amongst the most enchanting scenery will more than compensate for the irregularities of the climatic condition of the place. Indeed, where no lung or bronchial open lesion exists, there can be little doubt that gentle exercise, under moderately varying wind-currents and changing thermal conditions, imparts to the consumptive, if he be properly clothed, a greater vigor than will be produced under the most motionless atmosphere. Brusque currents of air must, however, always be guarded against when the patient is not taking exercise.

In addition to its bright skies and warm atmosphere, Nice has other and equally strong recommendations to those who first begin to feel the invasion of this disease. In no other of the Riviera towns is there to be found so much gay and cheerful social life and so many sources of agreeable entertainment; hence the mind may be pleasantly occupied under every vicissitude of outdoor climatic condition. If it rains or blows or be chill and cold in the open air, exercise may be had in the gymnasia or around the billiard-table, or by some other of the many means provided for that purpose. So large is the annual influx of intelligent strangers to this place that the invalid, if not inclined to exercise, may always find agreeable companions, with whom he may indulge in literary or scientific entertainment; or if less intellectually inclined, he will generally find, amongst

the large concourse of foreigners like himself, persons of similar taste, with whom he may spend the passing hours in agreeable conversation. But he must let nothing tempt him to late hours or undue excitement, either at games of hazard, intellectual conversation, or amongst the votaries of balls and parties in crowded and oppressive rooms. Over-indulgence in any one of these will surely counteract all the good the place can otherwise confer, either in the form of climate, *cuisine*, or social life.

From the large and constantly-increasing number of foreigners who visit Nice during the winter, more for the purpose of pleasure than of health, there is just now a threatening danger that it will sooner or later cease to be a proper sanitarium for any kind of invalidism. Whilst a moderate degree of cheerful social life is all-important to invalids, the constant whirl of excitement and fashionable entertainment (without which the ambitious votaries of pleasure think they cannot well exist) as a rule works serious injury to sick people; and when the dominant social element of any locality is of the character just named, the provision for invalidism is usually neglected, and the rational yet less imposing sources of comfort and enjoyment either entirely banished or so ignored as to seriously impair their good effects. It is to be hoped, however, that these results may yet be averted in a

place so intrinsically meritorious for many of the forms of invalidism.

Its bright suns, clear skies, and charming environs do certainly adapt it to the treatment of many nervous conditions, and particularly to those characterized by melancholy or great depression of spirits; but if the sources of rational enjoyment which now constitute its attractions should degenerate, from any cause whatever, into occasions of dissipation, it will become, like the ancient Roman bath-towns of the beautiful Bay of Naples, a moral and physical plague-spot upon this beautiful shore.

CANNES.

This little town of about eight thousand inhabitants is situated on the inland extremity of the Gulf of Napouile and in front of the low islands Les Lerins, with one of which, St. Marguerite, the famous legend of the "Iron Mask" is associated, as well as the more recent imprisonment and escape of Marshal Bazaine.

Although almost surrounded by wide and fertile plains lying between it and its protecting range of mountains, this place enjoys great exemption from northerly winds, and consequently possesses a mild and uniform climate. The wooded hills of Valauris, extending from the eastern extremity of the

gulf in a north-westerly direction, although of moderate height, shut off, to a great degree, the cold currents from the north and north-east. Directly north of the town these hills join, by irregular yet unbroken lines, the Estrelles, which, flanking the north-western border of the plain, continue in a bold and graceful curve-line to the western extremity of the bay, thus completing the chain of protecting heights north and west of these fertile and luxuriant plains and the little town in their midst. The rich and varied flora of these plains, the irregular yet graceful outlines of the woody heights, with the smiling cottages nestling in their bosom, and the broad and spacious bay, whose calm waters bathe its picturesque shores,—all contribute to the beauty of the entire *entourage* of the place. Though not so well protected as Mentone, it nevertheless enjoys a mean winter temperature but one degree lower than that of that sheltered spot. The annual rainfall is about twenty-five inches, and the annual number of rainy days fifty-two—a lower rate of rainy days than at any other station on this coast.

The diurnal range of the thermometer is much less than that of Nice, and thus better adapts it to patients suffering from grave pulmonary lesions. The town is now abundantly supplied with good water, and is rapidly improving in hotel accommodation. The Hôtel Impérial, Grand Hôtel de

Cannes, des Princes, and de la Méditerranée are all upon the boulevard l'Empératrice, in close proximity to the shore; the Hôtels de Provence, de l'Europe, and Victoria are considerably inland, but upon the same side of the bay. On the western side of the bay, and occupying elevated sites, are the Hôtels Belle Vue and Beau Site, whilst between them and the town, and near to the shore, is the Pavilion. The Hôtels Belle Vue and Beau Site are particularly well situated.

Two miles from Cannes, in a well-sheltered spot on the side of Vallauris, is the little village of Cannet. In addition to the protection it enjoys, there is from this place a magnificent view of the sweeping shore-line of the entire bay, which makes it not only a safe but a cheerful residence for invalids who cannot well bear too close a proximity to the sea. This place is not yet well provided with hotels, but, from the peculiarly favorable character of its site, I doubt not that it will before long become a favorite resort, and will be amply supplied with good accommodation for visitors.

For that class of consumptive patients whose strength will allow of free exercise in the open air, I regard Cannes as better suited than either Mentone or Nice. It is preferable to the latter on account of its greater exemption from sudden atmospheric vicissitudes and strong winds, and to

the former by having a better circulation of air and wider range for gentle pedestrian exercise.

MENTONE.

This town of five thousand inhabitants is situated about twenty miles east of Nice, at the base of a range of wooded hills dominated by the yet higher Maritime Alps, which rise in a semicircular line around this wooded escarpment to an elevation of about four thousand feet.

Of all the Mediterranean health stations, excepting, perhaps, San Remo, this enjoys the most complete protection from those objectionable winds the bise and mistral, and, as a consequence, a more luxurious tropical vegetation flourishes here than at any other spot on the Riviera. The town stands on a narrow peninsula, partially separating a fine bay that spreads its tranquil waters between the Murtola Point on the east and Cape St. Martin on the west.

This beautiful sheet of water, so wonderfully protected by the rear and flanking heights, in the tranquillity of its waters and the picturesque beauty of its shores, constitutes a most charming seaward prospect; whilst in the rear of the town a number of pretty little valleys extend back to the very base of the surrounding woody heights, giving

the place an air of quiet seclusion peculiarly pleasing. It is here, in these quiet and completely sheltered spots, that Nature displays her wealth of tropical vegetation, and her distinctive preference for Mentone as the *habitat* of the most delicate plants and fruits found upon the shores.

These little valleys and the gardens of the immediate vicinity give this place also its distinguishing characteristic as a sanitarium, and indicate the class of patients for whom it is peculiarly adapted. The neighboring heights in the rear of the town are altogether too abrupt and precipitous to admit of much adventurous outdoor exercise, excepting for the comparatively strong; but for that class of patients in whom graver symptoms of suppuration, hectic and distressing cough, with great debility, have been developed, and especially if there be bronchial complications present, these calm, quiet, and shady nooks are eminently adapted. Such cases require a pure, mild air of equable temperature, extending through as great a portion of the twenty-four hours as possible, in order that they may, if not able to take active exercise, at least remain out of doors for as long a portion of their time as possible. Amongst these shady bowers and flowering plants, warmed by a genial sun and protected from cold, chill winds, they may enjoy outdoor sanitary influences nowhere else to be found on this coast, and hence Mentone is an

appropriate place for them; but it is doubtful whether this is the best place for those whose object is to ward off a threatened invasion of this disease or to arrest it in its earlier manifestations. The environs of the town do not afford sufficient available open country for the active exercise such invalids require. The mean winter temperature of Mentone is about 49° Fahrenheit, and the annual rainfall about twenty-five inches; the atmosphere is dry and mildly stimulating.

Formerly the hotel accommodation here was not of the first order, but there is now quite a number of good hotels where great comfort may be enjoyed. On the eastern end of the bay, which is generally regarded as the warmer, the Hôtels de la Paix and Grand Brétagne, the Grand Hôtel, and the Hôtel d'Italie are located, the latter on an elevated site at a considerable distance from the shore. On the western side of the bay are the Hôtels Victoria, Méditerranée, and Londres. Near the shore, yet at a considerable distance from the water, are the Hôtels de Louvre and Beau Séjour. These, with a number of good *pensions* distributed in more or less proximity to the water-line, afford good and comfortable quarters for the present number of winter visitors to this place; but, from its growing popularity as a safe and sheltered winter home for those gravely stricken with this disease, the time is not far distant when

larger accommodation will have to be made, and for this there are many sheltered and pleasing sites yet unoccupied on the higher grounds overlooking the bay, which, if properly built upon, would be quickly occupied by those whose nervous condition renders a residence near the shore too stimulating and otherwise exciting to their nervous systems.

SAN REMO.

Within the Italian lines of this coast the Capes Nero and Verd enclose a wide bay, upon the shores of which this bright little town stands. It is about three hours' drive from Mentone by one of the most picturesque roads in the world, and, seen from a distance, with its white walls rising from a sea of surrounding verdure, the view is at once striking and beautiful. It is immediately surrounded, except on the sea-front, by a low range of irregular yet graceful hills clad to their tops with vast olive-groves; but its exemption from northerly winds depends upon the more distant ranges which form for it an almost continuous semicircular cordon of projecting heights, extending from the east to the south-western cape of the bay. Before arriving at San Remo, on the road from Mentone, the traveller will pass by the little town of Bordighera, situated on a promontory jutting out into the sea. Near to

this place are the famous palm-groves which for centuries have supplied the palms used in the celebration of Palm Sunday in the pontifical city. Connected with these ancient and venerable palm trees there is an anecdote which (although not vouching for its authenticity) I shall here mention. When Pope Sixtus V. had appointed the day for the erection of the famous Heliopolis obelisk, now in front of St. Peter's, it was regarded as so important and perilous an undertaking that prayers were ordered for its success and for the lives of those who were to assist in the elevation. On the day appointed for the work, such was the fear of failure from any confusion that might occur amongst the workmen, the pope issued a decree of death to any one who should be heard to speak during the elevation. All things progressed satisfactorily amidst the most profound silence until the huge shaft of granite had almost attained its vertical position, when it was discovered, to the infinite dismay of all, that a miscalculation had been made in the length of the tackle, and that the ropes were too short to allow the elevation of the shaft the very slight distance yet necessary to place it in position. At this critical moment, when the pope's engineers and the vast crowd of spectators there assembled were filled with dismay at what they regarded as the inevitable failure of the enterprise and the probable destruction of the monument, a sailor, notwithstanding the pen-

alty of death to any one who should speak during the operation, cried out "Wet the ropes!" which being immediately done, the tackle elongated, and the obelisk was placed in position amidst the triumphant shouts of the overjoyed multitude. Such, it is said, was the gratification of the pope at the result of this, probably the first overt disobedience of orders he had ever experienced, that, instead of having the sailor executed, he bestowed upon him and his descendants the perpetual monopoly of supplying the palms for the celebration of this festival in the city of Rome; and it is claimed that the present proprietors of these palm-groves of Bordighera are the direct descendants of that fortunate sailor.

San Remo is the only place on these shores that may be said to be a rival of Mentone in the growth and luxuriance of its tropical vegetation; which fact indicates, with a good degree of certainty, their climatic similarity. Both oranges and lemons attain to a fine degree of perfection here, and the olive of the surrounding hills is famous for the quality of its oil.

The mean winter temperature is about 49° Fahrenheit—the same as that of Mentone—but the mean daily range of the thermometer is said to be less. An increasingly greater attention to the meteorology of the region has induced the formation of careful hygrometrical tables, which show an

average rainfall about the same as that of the former place, but the number of rainy days is less, being only about forty-five.

The climate of San Remo is probably a little more moist and less stimulating than that of Mentone. The surrounding hillsides, not being precipitous, afford pleasant and sheltered spots for residences, and already many pretty villas, surrounded by the peculiar green of the olive and commanding delightful views of the wide bay and the sea beyond, may be seen nestling on these warm slopes.

I do not think this place has received as much attention as it deserves in the way of providing good hotels and comfortable *pensions* for the sick; yet, from the progress it has made in that direction within the last few years, it may be confidently anticipated that it will in a short time rival the best appointed of the Riviera towns in that respect, and become a most popular health resort. Indeed, with the acquired advantages the other more populous towns of this shore now enjoy, I should be inclined to give the preference to this place as a winter residence for the great majority of consumptive patients, as well as for those suffering from other grave forms of chronic disease who cannot well tolerate the vicissitudes and asperities of northern winter climates.

HYÈRES.

This, the most southern health station of France, is situated about an hour's drive east of Toulon, on the southern slopes of one of a series of wooded hills which surround it in the form of an amphitheatre. It is about three miles from the bay or *rade* of Hyères, and opposite a group of islands of the same name. Immediately in the rear of the town, on the summit of one of the Maurette hills, there are the ruins of an old feudal castle, which, with the form and foliage of the pine and cork trees that clothe these heights, constitute a picturesque and pleasing background to the place. The Maurette hills form its first line of protection against northerly winds, but the higher crests of the Maures, Caudon, and Pharon, seen in the distance, constitute the chief barrier to these currents. The east and north-east are tolerably well protected, but the west and north-west are more or less open, or at least imperfectly protected by the distant ranges in that direction.

The islands of Hyères, being off in the sea, almost directly south of the town, from their height and conformation, more or less break the force of the winds from that direction.

The mean winter temperature of this place is about the same as that of Nice, yet it is neither so subject to strong wind-currents nor is the atmo-

sphere so dry and exciting; on the contrary, the air of Hyères is moist and soothing, and this difference in the hygrometrical condition of its atmosphere from that of most other places on this coast can best be accounted for upon the electric influences to which I have already referred, as there are no apparent reasons, either in its wind-currents or in the conformation of the projecting ranges, to account for the moisture of the atmosphere.

The average annual rainfall here is twenty-seven inches; and, though differing but little from that of Nice and Mentone in that respect, the number of rainy days at Hyères is less than at either of those places. Hygrometrical observations made here certainly prove that, with an equal if not greater rainfall than at almost any other of the coast-towns of the Mediterranean, it has fewer rainy days, and yet a more moist and humid atmosphere.

Hyères has long been regarded as a favorable winter residence for cases of bronchial and pulmonary disease of an irritative type, and, in virtue of the superior humidity of its atmosphere, it would seem to be justly entitled to a preference over either of the other French stations of this coast for such cases. Although there are good authorities to the contrary, my experience in the treatment of pulmonary and bronchial disease has confirmed me in the opinion that for cases of bron-

chitis with a hacking cough and febrile symptoms without expectoration, and for cases of tuberculosis with much excitement of the general system, dry cough, and a restless feverish physical condition, a mild atmosphere like this, more or less charged with moisture, is preferable to a warm, dry, exciting one. Whether the moist and soothing atmosphere of this place in any sense depends, as has been intimated, upon the influence of electricity, upon its distance from the shore, or upon the character of the vegetation of the plain in front and the wooded hills in the flank and rear of the town, cannot, with the present light of climatology, be clearly demonstrated, but that it is more moist and soothing than any of the other stations of the coast both hygrometrical tests and the experience of invalids have sufficiently proven.

The wide and open valley in which this town is placed, and the gradually-retreating character of the hills surrounding it, not only give it a free circulation of atmosphere, but afford to the invalid a great variety of open country for exercise. It is to be regretted, however, that the roads in the immediate vicinity of the town are not better and the hotel and *pension* accommodation not more extensive and better adapted to the comfort of the sick. The best-protected hotels of the place are the Orient and the Hôtel du Parc, at the east end

of the town. Several comfortable hotels are located at the west end, but they are more or less exposed to the north-west wind. In the vicinity there are several well-sheltered spots which are better adapted, I think, to a residence in winter than is the town itself. Among these is the little valley of Costo Bello, lying beneath the sheltering sides of the Paradis, which surround it in such close embrace as to make it not only a calm but an exceedingly pleasant spot.

The town of Hyères itself is neither a picturesque nor a pleasing place for sensitive invalids of æsthetic tastes, nor are the sanitary elements of wide streets and good drainage what they should be for a winter residence for such patients; it is not much resorted to by either English or Americans, who instinctively desire space and pure air. For those, however, who have found the air of the other Mediterranean stations too exciting, this place, notwithstanding the objections mentioned, may well be recommended as worthy of a trial.

I have now given my invalid readers a brief and, I confess, an imperfect description of the principal winter resorts situated on this shore, and have ventured such remarks upon their climatic peculiarities as may serve to aid in making such a selection as may be best suited to them; but, after all possible instructions have been given the invalid on this subject, nothing will serve him for so unerring a

guide as his personal sensations and feelings under the influence of any climate. No climatic or other condition that, consciously to him, aggravates his sufferings can safely be regarded as suitable for him, whatever its general claims to consideration may be; and, on the other hand, wherever he feels best, either in winter or in summer, that is the place for him. I have not unfrequently seen invalids of this class who had tried the various Mediterranean stations without sensible relief, and who, on coming north, to the moist atmosphere of Holland or Belgium, have been able to breathe much more freely, to sleep better at night, and in whom the *ensemble* of usually distressing symptoms of this disease has been greatly relieved. These, I doubt not, are exceptional cases, but they are of sufficient frequency to intimate caution to the medical adviser in consigning his patient to any one health station from its known curative qualities, and to still hold out hope that other resources are in store for him to the invalid who may have in vain tried the favorite and popular stations.

PAU.

About one hundred and twenty-five miles almost directly south of Bordeaux, on an elevated plateau overlooking the clear waters of the Glave and front-

ing the lofty ranges of the Pyrenees, this, the most westerly of the French wintering-towns, is situated.

Notwithstanding the facts that its mean winter temperature is not so high as that of the Riviera towns and that its rainy days exceed them in number, thus rendering it less favorable to outdoor exercise, it possesses a peculiarity of climate well suited to some forms of pulmonary disease. Of all the invalid resorts on the Continent, Pau unquestionably enjoys the greatest exemption from brusque wind-currents.

Although not particularly protected from these by any physical barriers, the atmosphere of the place seems, during the greater part of the year, to rest in a quiet motionless state, or, at most, is disturbed by but gentle and quickly-passing breezes. The conformation of the distant mountain-heights has doubtless something to do with the deflection of wind-currents from this spot, but the wonderful calm it enjoys, connected with its great rainfall and large number of rainy days, would lead to the suspicion that some other agency, and probably that of electricity, is a factor in producing this result. Its mean temperature is about 43° Fahrenheit, its rainfall forty-three inches, and the average number of its rainy days one hundred and nineteen.

In considering the climate of this place, it ought not to be forgotten that a quiescent atmosphere more than compensates for several degrees of higher

temperature in any locality where ordinary wind-currents prevail. So long as the surrounding medium is below blood-heat, every current of wind that impinges upon the body carries off from it a certain amount of animal heat, and thus tends to reduce its temperature; whilst, in a calm atmosphere, the particles of air in contact with the body, becoming warm, are allowed to remain there, and thus animal heat is conserved and the sense of chill so often experienced under wind-currents in comparatively warm atmospheres is obviated. It is in consequence of this, doubtless, that the winter climate of Pau is generally not only well borne, but enjoyed, by very delicate individuals; and on this exemption from brusque winds, with the more or less moist character of its air, depends much of the adaptability of the place for consumptives and persons suffering from irritable bronchitis.

It is thought by some that there are too many rainy days here to admit of a proper amount of outdoor exercise for such invalids; but this objection is more imaginary than real. When the air is mild and soft, a gentle fall of rain should never deter a consumptive subject from this kind of exercise. So long as he keeps his feet dry and prevents his clothes from becoming saturated he may safely venture in the open air, and will often return from a promenade in a gentle shower rather refreshed than otherwise.

Good hotel and *pension* accommodation can always be had here, and enough of cheerful society may be enjoyed to gratify the reasonable lover of social life; whilst a great variety of delightful drives and excursions may be made in the picturesque surroundings. There is quite a number of other pleasant and agreeable places situated amongst the valleys and foot-hills of the Pyrenees, but, as they are chiefly summer resorts, I shall not here enter upon any description of them, and shall now leave the territory of Southern France and briefly notice some of the winter stations of other lands.

Of Spanish resorts I shall only here mention Malaga, as this town is unquestionably the most popular of all the sanatoria for consumptive invalids of that kingdom.

MALAGA.

The south-eastern coast-line of the Spanish peninsula has long been famed for the mildness and equability of its climate and the dryness of its atmosphere, and Malaga, situated on a fine bay of the Mediterranean, about sixty miles east of Gibraltar, probably combines these climatic elements to a greater degree than does any other Spanish town.

It is built upon a rather narrow plain, flanked

on the east by lofty hills, one of which is crowned by the ruins of a fine old Moorish castle. Directly north of the town a range of hills rises to the height of about three thousand feet, giving to the place shelter from the winds that blow in that direction. This protecting line continues in a west and south-westerly direction until it terminates in Torre Molinos, at the western extremity of the bay. Farther back, and dominating the first range of hills, the lofty ramparts of the Sierra Nevada and Ronda, in a semicircular line, constitute a double barrier against all northerly winds, and to a great extent against those of the north-west.

The town, although containing about one hundred thousand inhabitants, presents a by no means cheerful appearance. The streets are narrow, badly lighted, and dirty, the population closely packed, and the hotels and public-houses more or less gloomy. The only public promenade the place affords—the “Alamada”—is short and narrow, and by no means what a fastidious invalid would wish to enjoy. Add to this the fact that provisions are neither abundant nor of great variety, and scarcely ever cooked to suit the palate of an Anglo-Saxon, and we have a picture not of the most inviting character for the invalid, who requires to have his body properly supplied with good food and his mind with cheerful surround-

ings. This description of Malaga may be regarded as a rather darkly-drawn picture—and such it really is—but it must not hence be supposed that the place possesses no just claims to resort as a sanitarium for invalids; on the contrary, in point of mild and genial climatic influences, it has scarcely a rival in the basin of the Mediterranean.

Its mean winter temperature is 56° Fahrenheit, the daily thermometrical range exceedingly small, and the difference between the spring and winter temperatures not more than six degrees. Its rainfall is sixteen inches, and its rainy days about forty. Indeed, the principal defect of this climate is its slight rainfall and limited number of rainy days, owing to which the town frequently suffers from drought and dust.

It is unquestionably one of the most mild and equable climates of Europe, and for the patient who retains a good stomach, and whose morbid sensibilities can tolerate what might be called a strong degree of isolation and bad cooking, this would afford a winter residence from which he ought to hope for great benefit.

There are on the slopes of the first surrounding range of vine-clad hills enough of handsome and sheltered sites for any number of suburban villas and pleasant residences, where all the objectionable features of the town might be obviated; and when the natural merits of this place are better appreci-

ated, and these spots are built upon and properly embellished by modern and tasteful improvements, Malaga, I am inclined to believe, will become one of the first of Mediterranean hibernating stations for consumptive invalids; but until then there will be much wanting to constitute it a desirable place for Anglo-Saxons, who instinctively shrink from narrow, gloomy, and closely-confined places, and whose ideas of material comfort, alike in eating, drinking, and sleeping, differ greatly from many of those of the Latin race. A spot so endowed with genial climatic influences as this, if under control of the English-speaking race, would not fail soon to become invested with all that human ingenuity could invent which is calculated to minister to the material comfort of both sick and well, and consequently would rapidly rise to an enviable importance as a place of winter sojourn for the sick and feeble, who cannot well tolerate the asperities of northern winters or the more or less variable temperature of less favored localities.

MADEIRA.

The island of Madeira has long been considered a most favorable residence for consumptive patients; and were it not for its remote and insulated position and its comparative lack of cheerful social life and

of the many other personal comforts so necessary to the sick, I doubt not that the place would be one of the most popular as a residence for the subjects of tubercular disease.

For mildness of climate and equability of temperature it excels Malaga, and has scarcely any equal on the face of the globe. The mean winter temperature is about 61° Fahrenheit, that of spring 64° , summer 69° , autumn 67° . It will be seen from these figures that the range of the thermometer during the entire year is very limited. The diurnal alterations of temperature are often almost inappreciable; the atmosphere is moist and soothing and by no means relaxing or depressing; hence, so far as climatic elements are concerned, this island is peculiarly favored. Nor is it in climate alone that its merits consist; it possesses also a topography peculiarly picturesque and imposing. From a bold and rocky coast-line, the land rises toward the interior into a mountain-chain more than four thousand feet in height, separating the island into two distinct divisions, and from these central heights deep gorges with rugged and precipitous cliffs run down to the shore, imparting to the coast-line view, in some places, a pleasing character, and in others peculiarly wild and savage aspects made up of deep, dark dells and rugged and projecting headlands.

A most luxurious tropical vegetation clothes these dells and lower slopes almost to the water's edge;

whilst flowering plants of almost endless variety, form, and color everywhere abound. It might be reasonably expected that a spot endowed by Nature with so many pleasing and genial elements would be a crowded resort for invalids, but, unhappily, such is not the case. However soothing and agreeable the out-door life of the island may be, it cannot fully compensate for the want of cheerful social life generally experienced by invalids; and in consequence of this and the great distance of the island from the main land, this favored spot has not as yet become a very popular resort. There are, it is true, more or less invalids constantly at Funchal—the only town on the island where foreigners in any considerable number permanently reside—but, as compared with the Riviera towns, its annual visitors are few.

Funchal is small and by no means tidy or clean; the hotel and other accommodations it affords for strangers are of an inferior quality, and, above all, there reigns in the place an element of loneliness and insulation which often counteracts, in persons of sensitive nerves, all the good effects the most favorable climate could possibly produce.

It may be inferred, from what I have heretofore said as to the adaptability of uniform climates to the graver and more advanced forms of this disease, that this is, *par excellence*, the place for such invalids, and, so far as mere climate is concerned, I

think it certainly is; but when we consider that this island lies off in the Atlantic Ocean, thirteen hundred miles from Southampton, involving a long and trying voyage for persons in whom both physical strength and moral stamina have already been reduced by disease, it is not astonishing that so few of this class visit the place, and especially since the comforts it affords are so inferior to those of the Riviera towns less favored by climatic equanimity. There is also quite a difference of opinion on the part of medical men as to the merits of this climate for such patients, many regarding it as too damp and relaxing for very feeble persons; but, from my own personal observations in the treatment of this disease, a moist and soothing atmosphere is the best possible climatic condition for such cases.

I shall here close my remarks upon this island by expressing the opinion that, were it possible for persons gravely stricken with this disease to enjoy here the social and physical comforts to be had at the health resorts of the Continent, it would hold out to them greater hope of relief, if not cure, than any of them; but, unfortunately, these cannot now be enjoyed in Madeira, and I am compelled to leave the invalid to choose for himself whether he shall make the essay or not. If not peculiarly social in his tastes, and if, in addition, he possesses resources of agreeable entertainment within himself, so that he may not suffer from nostalgia or ennui, then I

would say let him by all means try this island. Its picturesque natural scenery and wealth of floral life will agreeably entertain his mind, whilst its mild, moist, and soothing atmosphere, constantly embracing his feverish frame, will greatly aid in arresting the disintegration of his living tissue, which so often results from the influence of either mental or physical friction.

ALGIERS.

This, the principal town of the French Algerian province on the north coast of Africa, has within recent years become quite a resort for consumptive and other invalids. It is built upon a steep hill-side, fronting a beautiful crescent-shaped bay of the Mediterranean; the hill, or rather series of hills, rises to an elevation of from four hundred to five hundred feet above the sea. The town, built upon successive terraces, extending almost from the water's edge to their summits, when seen from a distance, presents rather a striking appearance, but on approaching it more closely much of its beauty disappears amidst narrow streets, indifferent buildings, and a very considerable want of cleanliness.

The cheerful and pretty suburb of St. Eugène on the one side, and that of Mustapha on the other, are both agreeable features of its lower portion; whilst numerous Moorish villas and handsome res-

idences, nestling among the green foliage of the higher slopes, constitute a fine suburban feature of the higher ground.

Being now essentially a French town, Algiers possesses, in all that pertains to material comfort, many advantages as a residence for sick foreigners. The Orient, Algiers, De l'Europe, and De la Régence are the chief hotels of the place, and all afford tolerable, and some of them first-class, accommodation. There are but few *pensions* in the place where an invalid can be made as comfortable as he should be; consequently, most visitors are compelled to live in the hotels. A great variety of opinion now prevails as to the character of this Algerian climate and its adaptability to consumptive patients, some regarding it as possessing a moist, and others a dry, atmosphere, some considering it tonic and bracing, and others relaxing and enervating. There can be no doubt, however, that the atmosphere of Algiers is more or less moist during the winter months, and in this respect bears a strong resemblance to Madeira. The number of days in the year in which rain falls may be fairly set down at about one hundred, and, although the actual rainfall is comparatively small, yet this frequent precipitation indicates too great a saturation of the atmosphere to entitle it to the denomination of a dry climate. The mean annual temperature is about 69° Fahrenheit, and that of the winter months 61° Fahrenheit. One of the

climatic features claimed for this place is the almost insensible transition from autumn to winter and from winter to spring; yet I have known a number of intelligent invalids who have spent several winters in the town, and who have complained to me of its being subject at these seasons to frequent and disagreeable changes, high winds, and occasional damp, chill fogs.

It will be seen, however, by a reference to the mean winter temperature of the place, that it generally possesses the essential elements of mildness, and these, with the moderate degree of humidity of its atmosphere and its exemption from the sharp, cold wind-currents that sometimes come sweeping down from snow-clad mountains on the towns of the European side, constitute strong claims for Algiers as a winter health station. The hot south winds from the desert are broken and cooled by the high mountain-ranges which intervene between it and the shore-line of the bay, whilst the cool winds that blow from the Alpine regions of Europe, on the north-west, are greatly tempered by the warm sea over which they pass; and thus the place may be regarded as almost exempt from those climatic asperities that usually prove so inimical to consumptive patients.

There are many delightful and well-sheltered spots in the interior of this province, but they are yet too much under the dominion of wild Nature

and of the Arab to be recommended to the sick, and therefore I shall pass them, as being for the present out of the range of invalid resorts.

EGYPT.

To the invalid whose strength will permit, and whose will determines him to project his search after health beyond the Continent and the contiguous islands of the Mediterranean, Egypt affords many inducements as a place of winter sojourn.

A winter life upon the Nile, with its clear skies, balmy air, mild and equable temperature, its novel natural scenery, changing from day to day like the varying views of a kaleidoscope, and especially its ancient and gigantic ruins, now standing in the sands of the desert, pointing back through history and the dim distance of tradition to a civilization on these shores long since past and almost forgotten,—all these influences, so novel to a Western invalid, are strongly calculated to create a play of healthful mental emotions and produce impressions highly conducive to health, provided they are enjoyed in a leisurely manner under the sails of a comfortable *dahabeeyah*, and not crowded upon the sick man by the force of steam.

The climate of the upper and lower Nile valleys differs very materially. In Alexandria and its en-

virens, whilst the winter air is warm and the skies usually clear, the temperature is subject to sudden and very considerable changes, the nights often becoming quite cool and the air damp, hence Alexandria cannot be recommended as a safe place for consumptive patients during the winter; but on the upper Nile there is a winter climate quite remarkable for its mildness and equability. The atmosphere of all that portion of the river from Thebes to the Nubian frontier is peculiarly soothing, excepting when the wind blows from the south and south-east, when it becomes oppressive and almost intolerable; but fortunately these winds do not set in until late in the spring.

The voyager on the Nile should not forget, however, that in all the length of this great river—at least, until he enters Nubia—the difference between the temperature of the day and that of the night is sometimes quite considerable; and as he will be strongly tempted to remain late upon the deck of his boat, he should adapt his clothing to these sudden falls of temperature, which usually occur shortly after sunset.

The climate of Cairo, though generally mild and soothing, is sometimes close and oppressive. The thermometer ranges, during the winter, from 65° to 70° Fahrenheit; the sun, during the day, usually comes down through the most beautiful of azure skies, and the moon, at night, rises amidst

the splendors of starry heavens; the wind, which rarely blows with great violence, almost uniformly goes down with the sun, leaving the night-air calm and clear; yet, notwithstanding all this, Cairo cannot be strongly recommended as a safe winter residence for persons suffering from disease of the lungs. The city, having more than two hundred thousand inhabitants, is too compact, its streets too narrow, and too often redolent with the odors of filth and garbage.

Notwithstanding the fact that the vital statistics of the place show quite a large percentage of deaths from this disease, it is claimed by the inhabitants that amongst the native population they are of rare occurrence. The mortality from consumption at Cairo, it is stated, chiefly occurs amongst the negro slave population, who have brought with them from their native forests the inherited germs of this disease, to which as a race they are peculiarly subject. Of the correctness of this theory I confess I have great doubt, for we have no positive evidence that the African negro, in his native state, is more prone to tubercular disease than any other of the great families of man. The fact of these slaves being more subject to this disease than their masters may, I think, be rationally accounted for upon other and entirely different circumstances than that of race.

It must be remembered that the great majority

of them have been drawn from their forest homes on the upper shores of the great river and its tributaries, where in their native state they are accustomed to roam at large as their caprices or migratory inclinations lead them, thus enjoying not only unrestrained freedom of will, but uncontrolled exercise in the open air. But when captured and brought to the large cities as slaves, a thorough and most radical change of life is imposed upon them. From the wild freedom of their native forests they pass into a state of subjection, and from inhaling the fresh air of their plains and mountains they generally pass into the confined air of narrow and badly-ventilated apartments, where, shut out for ever from all that a native child of the forest cherishes as most dear, they pass their days and nights in gloom and despondency. Now, these are just the influences most calculated to develop cachectic disease of any type, and particularly tubercular disease of the lungs, in the captured slave.

It is a well-known fact that monkeys brought from tropical forests, however well provided with artificial heat and good food, die of tubercular disease. All travellers in these countries tell us that in their native forests these little animals exhibit the most restless activity and are of very considerable migratory habits, and that, so far as it has been possible to ascertain, they are not, in

their natural state, subject to this disease. Seeing that the captured monkey is generally kept warm and well fed, the fact of his dying of tuberculosis whilst in confinement strongly confirms the theory that he too dies from the want of uncontrolled exercise in the open air. No one who has observed the infinite variety of tricks to which he resorts in his cage can fail to be convinced that capricious and unrestrained motion is for him an indispensable law of his nature. Now, without endorsing the Darwinian doctrine of descent from this simian stock, I have not the slightest doubt that the influences which so injuriously affect both the monkey and the African negro in captivity and confinement are just such as often develop tubercles in the lungs of the white man, and that the agents best calculated to remove or ward off the disease in him must be similar in character to those of which the sick monkey and the negro have been deprived. Whether man is but a perfected monkey, and the wild negro but a lower type of man, ethnological science does not yet prove, nor does it much concern the invalid voyager on the Nile; but that an important lesson may be learned from studying the vital conditions of both the negro and monkey under their natural and artificial states there cannot be a doubt. In view of this fact, I would say to all who have left their homes and friends to seek health on the banks of this mysterious river, Do not stop in

either Alexandria or Cairo or tarry long at any one spot upon its shores, neither let the great monuments of the ancient civilization that once dwelt there tempt you to fatiguing exploration. Be sure you see them all—for that, when properly done, will constitute an integral part in the chain of influences upon which you must depend for your restoration—but see them at your leisure; not only imitate the free monkey in your inquisitiveness, but imitate him in his restless activity after something new, remembering, at the same time, that this activity of his is never forced, fatiguing, or constrained, but the instinctive, uncontrolled impulse of his nature. No man or woman ought to connect a search after health with sightseeing as a duty, nor should it be indulged in but as an agreeable recreation, unattended by any sense of obligation. Many cases hopeful of recovery have utterly failed through the mistaken notion that laborious and exhaustive sightseeing is not incompatible with recuperation, so long as the sights are new and exciting.

CHAPTER VII.

MINERAL SPRINGS.

HAVING indicated the hygienic influences and health stations of Europe which I believe hold out most hope to the consumptive invalid, it remains for me to speak of the various springs and baths of the Continent to which the great tide of promiscuous sufferers annually resort for relief.

The mineral springs of Europe may properly be classified under five heads:

1. *Ferruginous* or *chalybeate* waters, in which iron is an important constituent element held in some sort of acidulous solution.

2. *Sulphurous* waters, or those in which sulphur is found in combination with soda, magnesia, or lime in such quantities as to impart to them the peculiar taste and odor of the mineral.

3. *Alkaline*, abounding in the carbonates of soda, magnesia, or lime, to which they principally owe their alkaline character.

4. *Saline*, or those in which soda, potash, lime, and ammonia are found in combination with some form of acid. In this class may be ranged a num-

ber of other salts of a heterogeneous character, but not of sufficient prominence to entitle them to a separate denomination.

5. There is still another kind of waters, in which traces of iodine and bromine are found in chemical combination, and these, for convenience' sake, may be ranged under what would constitute the fifth class.

In all these five classes of springs traces of various other substances are found which may play a part in their curative *rôle*, but the prominent characteristics just mentioned are sufficient to justify their classification under these five denominations.

The amount of carbonic-acid gas mineral waters contain greatly modifies their action, if it does not, indeed, constitute a distinct curative agent in some forms of disease. That this gas, in combination with mineral waters, renders many of them not only more palatable, but also more lively and diffuse in their action on the skin and mucous membrane, there is but little doubt; and hence the importance claimed for it by some as an element of cure.

There are upon the Continent and adjacent islands more than three hundred mineral springs, all of which have more or less of a reputation for the successful treatment of some forms of disease; but to enter upon a description of all of them, with an indication of the specific virtues attributed to each,

would involve not only an amount of labor, but also a voluminous repetition, for which I have neither the time nor the inclination; nor do I believe it would add intrinsic value to the information and advice here intended to be given.

Many of the specific qualities claimed for these springs are purely imaginary and calculated to mislead the invalid rather than benefit him. I shall therefore endeavor to select for description only such of them as are the most conspicuous of their class, and shall content myself by indicating to the reader the qualities by which they are most prominently known to both the profession and the public, and for which especially they claim the consideration of the invalid.

The variety of natural elements in these waters is by no means unlimited, hence it would be folly to suppose that each spring in this great category possesses some special curative virtue nowhere else to be found; but in omitting the mention of many of them I have been influenced not so much from a disposition to ignore their claims to consideration as from a desire to avoid monotonous repetition and consequent confusion on the part of the invalid reader, and in speaking of those selected for description I shall follow no order or classification based upon national, geographical, chemical, or other characteristics, but shall discuss them in the desultory manner in which their claims and qualities have

come under my observation during my continental peregrinations.

SPA.

The only really important mineral springs found in the kingdom of Belgium are those of Spa.

The small town to which they have given the generic name of Spa is situated in a narrow but picturesque valley of the Ardennes, between Liège and Aix-la-Chapelle, being about twenty miles from either place. For years the only convenient approach to these springs was by a branch railroad, some twelve or fifteen miles long, leading from Pepinster, a small station on the main line between Brussels and the Rhine, but recently this branch has been extended on to Luxembourg and the Rhine, so that now Spa is in much more direct communication with the great continental routes of travel than formerly.

Lying in this deep valley and surrounded on almost every side by commanding heights, the little town enjoys great immunity from the chilling currents of air which not unfrequently blow from the north; but, on the other hand, being so closely girdled about by these hills, the heat during the summer months, when cool air is a great desideratum, often becomes exceedingly oppressive during the day, to be followed in the evening by a rapid

condensation of atmospheric vapor which often renders the night-air damp and chilly.

The environs of Spa are peculiarly beautiful, being bold, picturesque, and varied. Excellent carriage-roads lead up the mountain-sides by gentle grades, so that the heights above may be attained without either fatigue or danger. From any of these points the most charming views may be obtained. The long and undulating line of the higher Ardennes, looming up in the distance and bathed in that purple tint of atmosphere so peculiar to mountain-scenery, affords charming views from these heights; whilst the nearer landscape of the immediate surroundings, richly variegated with trim cottages and imposing châteaux surrounded by meadows and gardens in the smiling beauty of indigenous and exotic plants, and arranged with direct reference to perspective effect, contributes to the eye prospects of rare beauty.

The little town, also, nestling in the valley below, with its quaint, irregular buildings, its narrow, tortuous streets, and its motley and bustling crowd of living forms, constitutes quite a pleasing object as seen from the various lookouts picturesquely located amongst the dense foliage of the hills that girdle it so closely.

Starting from the narrow valley, foot-paths cut in a continuous series of zigzags lead up the precipitous surroundings by an ascent so easy that

almost any invalid, by resting on the benches placed at proper distances for this purpose, may reach the mountain-top without fatigue. Spa is well supplied with good hotels and comfortable apartments for visitors. As a rule, the *cuisine* is good and the supply of fresh meats, vegetables, and fruits abundant.

Handsome and tidy shops abound, where the usual fancy articles are sold. The specialty of these shops, however, is Spa wood, usually a variety of maple, which, from having been immersed for some time in the waters of the chalybeate springs, assumes a pretty gray tint. Upon this wood every variety of subject is painted in water-colors, and generally in the most artistic manner; it is then made into all kinds of small articles, both of utility and decoration, and sold at very moderate rates.

A very handsome building called the Redoute occupies one angle of the principal public square of the town, and constitutes the chief evening rendezvous for visitors. In it there is a fine theatre, open almost every evening during the season. There are also a fine ball-room, a reading-room, and two rooms formerly devoted to play, but, since public gaming has been suppressed in Belgium, now used as promenade and conversation-rooms. During rainy weather, when excursions to the environs are impracticable, this building

constitutes an important resort for visitors of almost every taste who seek relief from the *ennui* of their own special quarters.

In 1868 a bath-house was erected in a central part of the town, which, in respect to architectural beauty, as well as commodious and luxurious arrangements for baths of every description, is without a rival on the Continent. Into it the waters of the principal springs are conducted, where they are warmed by artificial heat to every desirable temperature for bathers. Since the erection of this building the external application of the Spa waters, in the forms of warm and cold, plunge, douche and shower baths, has become a popular and important adjunct in the treatment of invalids who resort to the place for its waters.

These springs are chalybeate, cold, and more or less impregnated with carbonic-acid gas. The Puhon, the most important of them, rises almost in the centre of the town, and is covered over to protect patients from the rain whilst drinking. It was from this spring that Peter the Great drank those enormous quantities of water which are reported to have wrought the cure in his case, for which he caused to be inserted in the wall over the spring a tablet, still to be seen, commemorative of that event.

About two miles distant from the town another spring, called the Geroustere, is situated. This

spring, although ferruginous, is not so strongly impregnated with the metal as the Puhon ; its waters have a slightly sulphurous taste ; they are not regarded as so heating as those of the former spring, and on this account seem to agree admirably with a class of invalids who cannot tolerate the Puhon. The only other springs of Spa worthy of notice are the Louvenière and Groesbeck, both rising in the wood at a considerable distance from the town ; they are only slightly mineralized, but, being picturesquely located on the high ground, in the midst of a charming forest foliage which embowers them in cool shades, they are much resorted to during the height of the season by parties who enjoy a breakfast in the open air and under the cooling influence of a natural forest-bower. There are good hotels and restaurants at both of these resorts, where a clean and cheerful breakfast can be served at short notice to any moderate number of guests. The morning ride from the cramped limits of the little town, up the mountain-side, by the finely-graded and macadamized carriage-road, or the walk for pedestrians along some one of the many paths cut through the forest to either of these springs, and the fresh and bracing air which these high and shady localities afford, generally impart a zest to the breakfast not experienced in the town below. If the waters of these springs are taken a reasonable time before indulging in breakfast,

the invalid who is sufficiently enterprising to keep up these excursions for any considerable length of time will generally be repaid for his efforts by the increased strength and vigor he will experience.

All the waters of Spa have a more or less stringent and tonic effect upon the mucous membrane of the stomach and intestinal canal, and in cases of old and troublesome chronic diarrhœa, depending upon a weakened and relaxed state of this membrane, are highly beneficial. They are also very useful in cases of chronic leucorrhœa resulting from general debility, and in chlorosis and other symptoms of debility occurring in young girls approaching the age of puberty. Many cases of nervous dyspepsia, accompanied by a relaxed and enfeebled condition of the general system, are signally relieved by them. Neuralgia, even of the most obstinate kind, when depending upon debility, as it often does, is not unfrequently entirely cured by a short sojourn amongst these mountains and the daily use of some of the ferruginous waters of the springs.

AIX-LA-CHAPELLE.

Aix-la-Chapelle, or Aachen, is situated in a wide and pleasant valley of Rhenish Germany, about

thirty miles from the Belgian frontier, on the line of railroad leading from Brussels to the Rhine. The surrounding country is of a high and rolling character, and, although not picturesque, combines that assemblage of gently-rising stretches, well-cultivated fields, green meadows, and woody heights, with intervening little valleys, which, if not grand and imposing, is at least always agreeable to the eye.

The springs of the place were known to the ancient Romans and resorted to by them for the purpose of the bath long before any of their other German rivals had been discovered. Indeed, the name of the town seems to have been derived from this use of its waters, as there can be but little doubt that the present name—Aachen—is but a corruption of the Latin *Aqua*, evidently applied by this conquering people to designate a spring of some peculiar quality or specific virtue.

Although the town cannot be regarded as pleasantly cool or well protected from the sun in summer, it is not without sufficient shelter from the heat to make it quite endurable. A wide boulevard, built upon the site of its ancient walls and planted with shade-trees, completely surrounds it, and constitutes a pleasant and agreeable promenade for visitors. The environs of Aix do not abound in many historic places to which pedestrian excursions may be made; nevertheless, quite a number of pleasant walks and drives lead out of the valley

to agreeable spots among the surrounding hills, one of the most important of which is Lausenberg, a high conical hill in the immediate vicinity of the town, from which a most charming and extensive view of the surrounding country may be had. Great improvements have been made within the last few years, both in the streets and in the architecture of the buildings of this old town. Indeed, if the great monarch who used to hold his imperial levées whilst enjoying the bath here were to return, it is extremely doubtful whether he would be able to recognize anything of his once favorite town but the steaming water in which he so often indulged. The ancient, narrow, and badly-ventilated streets have given way to wide, well-paved, and pleasant thoroughfares; the old crows' nests of dingy dwellings that formerly clustered around important centres of the town have long since disappeared, and spacious and cheerful dwellings, fine hotels, and bathing-houses where every comfort may be enjoyed have supplanted them. The principal hotels are so fitted up that the bath may be taken in any form without going from under the roof; consequently, these waters may be resorted to at all seasons of the year without exposure to inclement weather.

Although not at any time a gay, or even what might be called a cheerful, place of residence, yet during the season it is by no means an unendurably

stupid one. There are here a good theatre for opera and drama, and a salon where balls, concerts, and a series of social and musical entertainments are given, under the auspices of the local authorities of the town, not only during the summer season, but throughout the winter.

There are six springs within the limits of the town, divided into what are called the Higher and Lower; they are all of that class denominated thermo-sulphurous, their waters being warm and of a more or less sulphurous odor. It is the opinion of some good authorities that all these springs are merely what is technically denominated accidentally sulphurous, and that the small quantity of this mineral they contain is derived from vegetable or animal matter near the surface of the ground through which their waters pass in seeking an outlet. These opinions are founded upon the fact that the springs in the lower part of the town emit but a very faint odor of sulphur, and that the waters in the upper portion, which have always been regarded as the most sulphurous, lose this principle by being agitated a short time in the open air. It matters but little whether the sulphur is derived from a deep or a superficial source if they really contain it, and of this fact there cannot be a doubt.

The Source de l'Empéreur, rising in the upper portion of the town, is the hottest of these springs, ranging about 122° Fahrenheit. From it the foun-

tain Élisé is supplied, around which a crowd of invalid visitors may be seen drinking at an early hour of every day; this fountain is below the surface a very considerable depth, but the water is passed up to the drinkers by trim and tidy girls hired for that purpose. There is in front of it a colonnade or portico, under which drinkers may sip their morning portion or promenade in bad or rainy weather without exposure; there is also attached to it a handsome garden, where a stroll among the flowers and shrubs may always be enjoyed in fine weather. This is the chief place of morning rendezvous for the visitors of Aix, and here they exchange gossip and concoct their plans for the day. Connected with this colonnade there is a restaurant, where, if desired, breakfast or other refreshments may be taken without passing from under cover. The Source de l'Empéreur supplies, in addition to the baths of that name, the Bain Neuf and the Bain de la Reine d'Hongarie. The other springs of the place are the Source de St. Quirère, La Rose, St. Cornélius, and St. Charles, the last three being in the lower part of the town; they respectively supply bathing-houses named after them, which are fitted up with taste and a direct reference to the comfort of bathers.

The Source de l'Empéreur may be regarded as the chief spring of this place, being several degrees hotter and more mineralized than the others. Its

waters contain, as a chief solid constituent, chloride of sodium; they also hold considerable quantities of the carbonates of soda, potash, and lime. It would appear from this fact that they are rather saline than sulphurous; nevertheless, the unmistakable and dominating odor of sulphur emitted by them as they issue from their subterranean source marks them as distinctly belonging to this class, and their therapeutical action upon subjects submitted to either their external or internal use proves beyond a doubt that this agent plays no unimportant part in the physical phenomena produced.

First among the diseases for the cure of which most persons resort to this place are those of the skin (especially if of a syphilitic origin), rheumatism, chronic affections of the bones and joints, and particularly diseases of the bones, scalp, skin, and mucous membrane of the respiratory tubes, the result of injudicious mercurial saturation. For the cure of these latter affections these baths have within recent years acquired a great reputation.

There is a theory adopted by some of the prominent local medical practitioners here, and concurred in by several other able medical writers, that, combined with the internal and external use of these waters, the iodide of potassium is not only rendered more efficient as a remedy for mercurial poisoning, but that in the treatment of secondary syphilis

mercury may be used in connection with it, to the full extent of system saturation, not only without bad effects, but with marked benefit to the patient. To the former of these opinions I feel inclined heartily to assent, and I also think there is much plausibility in the theory that iodide of potassium, in connection with the use of these waters, does promote the eradication from the system of mercurial poison, in whatever form it exists, by impressing, in some unexplainable manner, either the vital organism or the metal itself, or probably both, so as to render its expulsion practicable. But I seriously doubt that a system of mercurialization, such as is often practised here upon syphilitic patients, can be adopted without entailing upon the subject a risk of the serious consequences that so often follow prolonged saturation by this mineral.

That obstinate cases of secondary and tertiary syphilitic disease do often get well under this treatment, is sufficiently vouched for by good authority, but that such patients are secured against the remote disastrous effects of the overwhelming mercurialization frequently here practised is by no means so clearly proven. Indeed, I am under the strong conviction that in my own experience I have met with quite a number of persons who have suffered seriously from this treatment. I have, however, great faith in these baths, in con-

nection with the iodide of potassium taken internally and applied in the form of an ointment to the skin, as valuable agents in assisting to eradicate the secondary effects of syphilitic poison from the system, unaided by mercury, and should prefer to rely upon this course even in the gravest cases.

For the various other forms of disease already mentioned these waters can be heartily recommended. The vapor-bath, in many of them, is even more effective than the water, but should be alternated with the water-bath in such a manner as to induce a free capillary circulation and secure a local alterative agency without too much exhausting the patient. This mode of treatment often produces the most happy results after the warm bath alone has entirely failed.

For chronic muscular rheumatism, and certain forms of gout unattended by nervous or vascular irritability or great physical prostration, a course of these baths is also often highly beneficial; but I have rarely known them to do well in cases of low vital status or extreme debility. There is another group of morbid conditions for the cure of which the waters of Aix are not generally recommended, but for which I think them extremely applicable. I refer to that train of morbid phenomena characterized by a sallow complexion, enlarged spleen, torpid and irregular bowels, more or less emaciation and nervous irrita-

bility, accompanied by vague shifting pains, and not unfrequently painful neuralgia, without any clearly-defined local lesion. This condition is frequently the result of unsubdued or uneradicated malarial poison, which, although not existing in the system in sufficient force to produce the periodical characteristics of malarial fever, is yet present in a lurking form strong enough to disturb functional harmony and inflict a great amount of suffering; and in many of these cases quinine seems to have but little, or at least only temporary, effect. That sulphur, under certain circumstances, acts upon the living economy as an alterative, I have long since become convinced, and that when judiciously administered it will in some instances not only cut short malarial fever which has resisted even the heroic administration of quinine, but will eradicate the lurking virus so often remaining after the periodical fever has passed off, I have had the most positive proof.

For all such cases, then, I would most cordially recommend the use of these waters. If taken internally and used in the form of the bath, in connection with a good generous diet, healthful exercise in the open air, and the enjoyment of cheerful society, they will often effect an entire cure; but such subjects must make it a cardinal point to live well during the cure, otherwise it will fail.

WIESBADEN.

This famous old bath-town is situated about two miles from the Rhine, in a beautiful valley of the grand duchy of Nassau, and may be reached by a few minutes' drive from Biberich, on the right bank of the river, or by rail from the Lahnstein station, on the same shore. The valley is narrow, irregular, and bounded by high rising spurs of the Taunus range of mountains, which loom up in the distance toward the north and north-east; the immediately surrounding heights are cultivated with great care, and present to the summer visitor a smiling and cheerful prospect on every side. From the irregular character of the valley and the closely-projecting flanks of the surrounding hills, the town is badly ventilated, and during the summer months becomes close and sultry; indeed, were it not for carefully-laid-out and well-shaded roads leading to the higher elevations where fresh air circulates, and which may be reached in a few minutes' drive, a residence for foreigners in Wiesbaden during the months of July and August would be almost unendurable.

The old part of the town is badly built; its streets are narrow, irregular, and indifferently paved; but the more modern portions are handsomely constructed, the streets wide, well paved, clean, and cheerful.

Wiesbaden has long been regarded as one of the most popular watering-places in Germany, and, as far as the comfort of its hotels, *pensions*, and private apartments is concerned, it justly deserves this reputation. No pains have been spared, either by the municipal authorities or private individuals interested in the place, to make it a comfortable residence for strangers. Nor have these efforts been in vain, for not only do suffering foreigners resort in large numbers to its thermal waters during the summer months, but many families remain over during the winter season, on account of the great domestic and social enjoyments the place affords in the shape of comfortable quarters, cheap living, and educational facilities.

Its proximity to Frankfort, Mayence, Coblenz, Cologne, and indeed all the interesting and historical places of the Rhine, doubtless influences many foreigners to select this as a place of residence with their families, but the unquestionable mildness of the winter climate in this sheltered valley, and the local advantages just mentioned, are obviously the chief inducing causes.

During the summer season the immediate surroundings of the town afford an endless variety of agreeable sources of recreation. The high rolling hills, with their irregular artistic outlines, the picturesque intervening valleys, either sleeping in the untouched beauty of Nature or embellished by the

hand of the landscape-gardener, afford an assemblage of pleasant drives, cool, shady walks, and quiet sylvan retreats rarely excelled at any other continental watering-place; whilst from the crests of any of the more distant hills the most charming views may be obtained. From any of these heights, stretching away toward the Rhine, a beautiful panorama of hills and dales, sombre forests and smiling meadows, fields rich in yellow waving grain and orchards bending beneath their fruity crops, lies within easy range of the eye; whilst farther off, bathed in mellow light, may be seen that weird and fantastic assemblage of distant topographical outlines which constitutes the peculiar charm of the famous old river. Daily healthful and agreeable excursions may be made in almost any direction from the town amongst the environing hills with comparatively little effort. Well-graded and carefully-kept paths lead through the forest up to Neuthal and the Neroberg, and to a beautiful Greek chapel which stands on a commanding site, with its gilded domes looming up in glowing relief against the bright-green foliage of the surrounding forest. This chapel, in its architectural plan and in the richness of its exterior and interior finish, is a perfect gem. It was built in memory of Grand Duchesse Elizabeth Michailowna, who was a Russian, and a member of the Greek Church. From the plateau on which the chapel stands a

delightful view may be had of all the surrounding country.

One of the most agreeable and interesting excursions that can be made from the town is to the ducal hunting-box. The lodge is situated on a commanding eminence of the Taunus range, and from its roof may be enjoyed, in fine weather, one of the most extensive and charming views in Nassau. Looking off toward the Rhine, the old river may be seen, on a clear day, emerging in silvery scintillations from the distant forest foliage, again to plunge in shadow behind an intervening hill and suddenly reappear in tortuous windings amongst the vine-clad hills until lost in the dim distance of the purple atmosphere; whilst at the feet of the visitor lie the dark forests of the Taunus, and, farther on, bounded by the Berge Strasse Mountains, the bright fields and pretty hamlets of the dwellers upon the plain, who till its fertile soil from year to year.

The most imposing architectural feature of the town proper is the Kursaal, a handsome building erected originally for the purpose of public gaming. Within its walls, in addition to the luxuriously-furnished rooms originally fitted up for gaming purposes, there are a ball-room, a reading-room, and several apartments for refreshments. The principal *salon* of this building is supported by columns of variegated marble and furnished through-

out in admirable taste, and when well lighted presents a most cheerful, if not a gorgeous, appearance. The grounds surrounding the Kursaal are planted and laid out in exquisite taste. In the rear, and between the building and the adjacent hill, there is a little lake well supplied with fresh water. From this basin paths lead up through parterres of flowers, bosquets of indigenous and exotic plants and trees, to the higher grounds, upon which may be seen many charming modern châteaux, nestling amongst the rich foliage and commanding a fine view of the town and valley below.

No watering-place in Germany is better supplied with large and comfortable hotels, some of them being quite imposing in architecture, and most of them having bath-accommodations attached to them. The Wilhelm Strasse, leading off from near the railroad station, is a handsome street, upon one side of which are built rather imposing houses for the accommodation of first-class visitors, whilst on the other side runs a wide shady promenade.

The Rhein Strasse, fronted by a similar fine avenue of trees, constitutes another favorite promenade in hot weather. In the less fashionable part of the town good and comfortable lodgings may be found in great abundance, but nearly all of them lack healthful ventilation and sufficient light.

There is quite a number of thermal springs within the limits of the town, differing somewhat

in temperature, but all possessing the same chemical constituents. From most of them the waters are conducted through pipes into the large hotels and bathing-establishments, and there utilized. The Kochbrunnen is the only spring from which patients drink. Its temperature is about 168° Fahrenheit, and its solid contents consist almost entirely of chloride of sodium, with slight traces of potash, lime, magnesia, and ammonia. The proper time for drinking of this spring is in the morning, upon an empty stomach. The water should be drunk, as should all other mineral waters, slowly, allowing an interval of fifteen or twenty minutes' repose between the glasses. The quantity taken at one time should depend upon the ability of the stomach to digest it.

It may seem strange that the waters of a mineral spring the chief solid constituent of which so nearly resembles common table-salt should have acquired, and retained for centuries, such a reputation for the cure of some of the most painful diseases afflicting the human family; yet so it is, and no amount of reasoning can set aside the fact or dispute the overwhelming amount of testimony in their favor; but, unhappily, here, as at every other mineral spring on the Continent, the list of maladies for which the waters are claimed to be remedies is altogether too voluminous. It is to be regretted that so much of the homœopathic doctrine of specifics has entered

into the recommendation of mineral waters for the cure of disease throughout both Germany and France.

The doctrine that within a very limited and circumscribed space, where a number of springs may chance to have been found, each one possesses some peculiar control over some special form of disease or derangement of the human organism, strongly smacks of charlatanism, by whomsoever taught; yet these opinions have a strong hold upon the public faith, and, with our present limited knowledge of the intrinsic merits of Nature's arcana and of the extent to which faith may aid in a cure, it probably would not be safe entirely to ignore this theory. There can be no doubt that these waters of Wiesbaden have greatly relieved, and very often entirely removed, old chronic cases of rheumatism, articular swellings, partial paralysis of limbs, certain forms of gout, and neuralgia and some of its kindred affections, but, on the other hand, what a crowd of witnesses might be summoned up ready to testify that they had not only failed to afford relief for them, but had actually aggravated the disease under which they suffered! Dismissing, then, from consideration the treatment of many forms of disease for which I believe they possess no special applicability, I do not hesitate to recommend them as worthy of a trial in all cases of chronic rheumatism, either articular or muscular, and especially

where there is reason to suppose they are the consequence of exposure to wet and inclement weather, to long and exhaustive physical effort, either recent or remote, or to any of those climatic and atmospheric vicissitudes to which the soldier, the sailor, and the sportsman in the field are so often and so rudely exposed.

In certain forms of gout they often afford relief, especially where no calcareous depositions have as yet occurred in the joints. Some of the most painful, and indeed dangerous, varieties of this disease are of this character, and for such the local application of these mineralized waters to the general surface, in connection with their internal use, will often afford signal relief, and when persisted in for any considerable length of time will frequently eradicate from the system the producing cause of the suffering. It is, I think, for gout of this character that these thermal waters are pre-eminently adapted, for in such cases there doubtless circulates in the blood the offending matter, without sufficient local tendency to determine it to a local deposit, but of enough force to impress painfully the favorite *habitats* of the disease. In these cases it is probable that by the internal use of the water, this offending matter is either neutralized or determined upon some one or all of the great depurient organs, thence to be thrown off from the system; whilst the local douche, independently of its emollient

local effect, may be fairly presumed to counteract the tendency to local fixation, and thus keep the morbid agent moving until thrown off in the manner described.

If gout be the result of a vice in the blood, and these waters relieve the disease, we can scarcely account for this relief upon any other theory. When, however, a patient has previously suffered from a severe case of acute rheumatic fever, before trying these or any other thermal springs for relief from any lingering chronic form that may yet remain, it would be well to have the condition of the heart ascertained by some good auscultator, for not unfrequently there remains, after an attack of acute inflammatory rheumatism, a condition of this organ which, though unsuspected by the patient, might seriously compromise his life in an attempt to cure a local rheumatic pain by the application of a strong current of mineralized waters to the part affected.

There are many cases of erratic and shifting pains of a distressing character sometimes manifested by distinct periodical paroxysms, and in other instances by remaining continuously for days and then suddenly leaving the patient, to recur again at some unexpected moment with increased violence. This class of painful affections may be regarded as holding an intermediate position between rheumatism and neuralgia, sometimes assuming a purely neuralgic character of the most dis-

tressing kind. Generally, when not depending on an organic change, these painful affections manifest themselves in persons whose vital force is below the par standard, and in whom the vital process of assimilation may be suspected of not being well performed, thus leaving in the circulating current an unconverted aliment which expresses its presence by these capricious and often distressing pains. For such patients a good generous diet, pure fresh air, and healthful exercise are the sovereign remedies; nevertheless, a course of these Wiesbaden waters may greatly assist in the process of cure. There are some forms of paralysis which may be relieved by these baths, but they can be only such as depend upon some aberration of nerve-power in the member paralyzed.

In an earlier portion of this work I have intimated that in all these waters there may be occult constituents which defy detection by the appliances of modern chemical science, and when it is remembered that the spring here known as the Kochbrunnen has derived its name from a resemblance in the taste of its waters to diluted chicken-broth, we may well hesitate before declaring a contrary opinion; but upon the hypothesis that the elements of common salt are the only effective agents here held in solution, who can pretend to say what an important rôle they may not play in regulating the living economy and removing disease? We do

know that as an antiseptic common salt prevents the decomposition of animal tissue, and that without it many living forms would die. No perfect type of human life, either civilized or savage, can well do without it in some shape. The wild beasts of the forest seek with avidity the places whence it flows spontaneously from the earth's surface; the flocks and herds in our fields languish without it; all tribes of sea-fish breathe it in; and the myriad world of mollusk life inhabiting the great deep find in its briny fluid the elements from which to construct their infinitely varied habitations. Deep down in the dark valleys of old ocean's bed parterres of gorgeously-colored plant-like living forms bloom and flourish in it, and from it draw not only the material of their organism, but also the color-giving substance of their gorgeous hues.

Hence we may reasonably conclude that, with all our boasted wisdom, we have not yet entirely found out the hidden resources Nature may have stored away even in the simplest elements around us; and so long as experience, the most unerring guide we possess, does not intelligently and clearly contraindicate a measure, however simple, which has for its object the amelioration of our suffering, we should at least give it a trial. But reason has asserted and experience has already proved again and again that for organic diseases of the heart, lungs,

brain, and kidneys where much structural disorganization has taken place the waters of Wiesbaden do only harm, and therefore ought to be avoided.

SCHWALBACH.

These chalybeate springs are situated in a narrow valley amongst the Rhine hills, between Wiesbaden and Ems. The town of Schwalbach is by no means picturesque either in its plan or in the architecture of its buildings, nor are there so many amusements to be enjoyed here as at either Wiesbaden, Baden, or Hombourg; nevertheless, the resources of the place are well adapted to the vital condition of invalids who seek health from the waters of its springs.

These waters, being chalybeate and presumably fortifying, are generally resorted to by persons whose vital energy is below a par standard, and who need repose rather than the distractions of fashionable life. Although the immediate surroundings are denuded of forest, the environs, which may be reached in a few minutes' walk, afford agreeable shade and a pure and tranquillizing atmosphere, which is scarcely less important to the weak and exhausted frame than are the ferruginous waters of the springs.

Within recent years Schwalbach has greatly

improved, not only by the erection of handsome new buildings, but also in the accommodation for visitors generally ; much, however, is still lacking to make it in all respects a comfortable sojourn for sick people, the living in most of the hotels and *pensions* being as yet far from what it ought to be.

Although more or less exposed to the direct influence of the sun's rays, there are certain quarters in the town where an agreeable shade may be enjoyed in the open air during the heat of the day. A fine avenue of trees, called the *Allée*, and another, the *Stahlbrunnen*, constitute the chief promenades of the place, and these shady walks contribute greatly to the comfort of those who cannot endure the confinement of their apartments and yet have not strength enough to venture on the hills beyond.

The Ducal bath-house, rather an imposing building, into which are conveyed the waters of the *Stahlbrunnen*, the *Wienbrunnen*, and the *Pauline*, is situated on the *Allée*. A separate compartment in this building is appropriated to the waters of each of these three springs, which, being cold on entering, are warmed by steam to the proper temperature for baths. The bathing-conveniences in this building are suited to the tastes and purses of all classes of patients, the rooms ranging from the most sumptuous to the plainest and simplest. A

handsome colonnade extends the whole length of its front, where one may find for sale all such fancy articles as are generally kept at watering-places.

The most ancient of these Schwalbach springs is the Wienbrunnen, dating back to the time of the Romans, to whom it was known under the name of "Aqua Vinaria," from its supposed resemblance in taste to that of wine. This spring rises near to the bath-house and is much more frequented than any of the others, probably more on account of its proximity to the residences of most visitors than from any other motive. Chemical analysis has shown, however, that, although these springs all contain iron, they do not contain it in the same quantity, nor is the proportion of saline substances exactly the same in any two of them. The Wienbrunnen, according to this analysis, contains less iron than the Stahlbrunnen, but the larger proportion of saline matter held in solution by the former renders its waters more palatable. It is also generally considered as being the most efficacious spring of the three in cases where iron in the blood is the desideratum, from the fact that its solution and combination with the other chemical salts seem to be less offensive to the digestive organs and more agreeable to the palate.

The Pauline, situated about a quarter of a mile from the Wienbrunnen, in the same valley, is not

so popular as it formerly was for internal use, but it is much employed in the bath.

The Stahlbrunnen, the most strongly chalybeate of the three springs, is at some distance from the others and is situated in another valley, which, added to the fact that its constituent elements differ slightly in quantity and quality from the others, has led to the inference that its waters percolate through different subterraneous strata from those of its companions, the Wienbrunnen and the Pauline, and therefore possess different healing qualities; but this difference of combination is not sufficiently marked to be of much importance.

A number of other springs is found around and about Schwalbach, all more or less differing from each other, yet all possessing the same general characteristics, so that no description of them need here be given. As I have previously intimated, the class of invalids resorting to Schwalbach are those whose vital condition is below the par standard, and who are supposed to be laboring under a paucity of red blood-globules in their circulation. Amongst these may be mentioned young girls in whom the menstrual function is but imperfectly established, and in whom an anæmic state, attended with great pallor, exists; women suffering from passive uterine hemorrhage, protracted leucorrhœa, or debility resulting from rapid child-bearing, in-

volving long and exhaustive lacteal secretion, with the vigils and anxiety incident to the care of young children; men who, from dissipation or overwork of either mind or body, have exhausted their vital force, or who, from sedentary habits and close application to study in badly-ventilated apartments, have become the subjects of nervous aberrations, such as palpitation of the heart, giddiness, ringing in the ears, faintness, and inability to sleep.

For all such maladies, and many others of a kindred character, the use of these waters is often of decided benefit, and they may be tried with great hope of cure.

EMS.

Bad-Ems is situated in the duchy of Nassau, on the banks of the little river Lahn, and about twenty miles by railroad from the Rhine.

The town is chiefly built upon the right bank of the river, but within recent years a handsome suspension-bridge has been thrown across the stream, and quite a number of imposing buildings, including a bath-house complete in all its details, has been built on the opposite shore. The valley in which the town is situated is narrow, the surrounding hills high and precipitous and covered to their tops with a dense forest-growth, which

renders the place, excepting in midsummer, more or less damp.

The situation of this popular bath-town, with its handsome buildings lying at the very base of the imposing heights above them, is quite cheerful and pretty, but it possesses that which renders it an unsafe place of sojourn for many delicate constitutions. The depth and narrowness of the valley and the abrupt and precipitous character of the hills, covered with dense pine forests, constitute disturbing elements in the diurnal temperature, the equanimity of which is so important to persons suffering from affections of the respiratory organs. Excepting during the midsummer months, and occasionally even then, as soon as the sun drops behind the crest of the hills, the process of atmospheric condensation commences in the narrow valley below, and long before the morning arrives the town is enveloped in a chill, damp air only to be dissipated by the returning sun, which, when at its meridian height, pours down upon the valley its fiery rays, rendering it for the time close and oppressive. The surrounding heights, however, afford interesting views, and generally a cool and refreshing atmosphere impregnated with an agreeable balsamic odor from the surrounding pine forests. Good roads lead from the valleys to these higher grounds, but the hills are so steep that scarcely any excepting the robust in health can

venture up on foot. There is, however, a liberal supply of sure-footed and docile donkeys always kept on hand, which may be had, either by the hour or the day, at quite a moderate price. These mountain-excursions amongst the pines and along the pathways cut in the hillsides are healthful as well as agreeable, and, since the suppression of public gaming at Ems, constitute the chief recreation of the place.

As at most of the springs of Germany, there are here good, bad, and indifferent hotels, *pensions*, and lodgings, where all classes of visitors may be suited, according to their tastes and means.

The principal public buildings of Ems are the Kurhaus and the Kursaal. The latter was originally built for public gaming, and contains handsome and richly-decorated rooms formerly devoted to play, but now appropriated to more rational and less exciting entertainments. Under a colonnade extending along one side of this building may be found the usual shops of *bijouterie* and other such fancy articles as are to be seen at watering-places generally.

The Kurhaus is quite an ancient, straggling building, containing numerous lodging-rooms, a public dining-room, and good bathing-accommodation. Under this building, in rather a dark and uninviting chamber with a sombre and heavily-arched roof, the two principal springs of the place

are located ; and if one were to judge of the virtue of these waters by the small quantity that flows from the rock, he would consider them precious indeed.

The impatient, jostling crowd that may be seen in those dingy chambers at an early hour of each morning during the season, waiting in turn to be served from these tiny streams, presents an interesting and curious spectacle to a disinterested, healthful looker-on. To an intelligent medical man the eager, confiding crowds he witnesses not only here, but at every other reputed health-giving fountain, must suggest a train of serious, if not painful, reflections. It is true that his knowledge of vital resource and the power of recuperation in any given case must necessarily be more or less imperfect ; yet his professional training must have been worth little if it has not enabled him to see and know how little very often there is, in all the combined resources of medication, to cure the sick and restore lost health, and especially how utterly inadequate to this end are many of these mineral waters, popularly regarded as exerting specific control over certain grave and formidable maladies.

These waters of Ems have long been considered as possessing peculiar virtue in the treatment of disease of the respiratory organs, including incipient tubercular phthisis, but for the cure of this latter malady I fear this reputation has not been justly

merited, for, with my notions of the nature of this disease, I cannot well conceive of a greater mistake than for an invalid laboring under its well-marked symptoms to locate himself in this close and narrow valley during the summer heats, and resort to the waters of the place in the hope of being benefited by them. For certain relaxed conditions of the mucous membrane of the respiratory organs, attended with morbid mucous secretion and consequent cough, they are probably of great value, especially if this condition be concomitant with a weak circulation, cold extremities, a harsh skin, and great nervous irritability, without febrile action.

When analyzed these Ems waters yield, as a predominant solid element, carbonate of soda, with a considerable portion of muriate of the same salt; they therefore belong to the class strictly denominated alkaline waters, and, in virtue of this quality, they seem to have an excellent effect in many cases of bronchial disease.

That some sort of specific change in the action of the capillary vessels distributed over the mucous membrane of the bronchial tubes is produced by their use must be admitted; otherwise it would be impossible to account for the many cases of recovery from chronic coughs and bronchial irritation that here occur. When we consider that the vast majority of chronic coughs, unaccompanied by tuber-

cular deposit, result from a passive, or at most a subacute, congestion of the bronchial or laryngeal mucous membrane, it may readily be conceived that an agent introduced into the blood producing a gentle but diffuse stimulant effect, and especially arousing to increased activity the vessels of this membrane, may by this action alone relieve capillary congestion, upon which so many distressing coughs depend.

The warm bath, by inviting the circulation to the general surface and imparting to it a quickening effect, is a most important auxiliary element in the treatment of these cases, and should not be neglected excepting for special reasons. There can be no doubt that many distressing coughs depending upon a stomachic origin are here cured also by this same action upon the mucous membrane of that organ.

There are likewise many forms of dysmenorrhœa, leucorrhœa, amenorrhœa, and other functional disorders of the female generative organs depending upon local causes for the treatment of which I believe them to be well adapted, especially when used in that form of local application adopted at the Bubenquelle, or Source des Garçons, which consists in conducting an ascending jet of water by a metallic pipe through an aperture in the bottom of a basin in which the subject sits. By this mode the water, in the form of an ascending douche, is

made to lave and penetrate the genitalia with considerable force, and is brought in direct contact with the parts involved in this functional derangement. In cases of painful menstruation or of an entire suppression of this function, resulting from uterine congestion, the application of these thermal waters in this form to the uterus often succeeds not only in removing the congestion, but also in tranquilizing the painful nervous irritability which in so many cases is reflected from this organ to the brain and other vital centres. Chronic cases of leucorrhœa depending upon a flaccid and an atonic condition of the genital mucous membrane are also frequently entirely cured by the tonic and alterative effect of this jet, applied cold.

Sterility, when it does not depend upon positive congenital or purely physical conditions inevitably entailing it, has also often been removed by a short sojourn at Ems and a course of the ascending douche to the genitalia; hence, where this condition is suspected of depending upon mere functional derangement, the Bubenquelle of Ems is well worthy of a trial.

HOMBOURG.

This charming watering-place is situated on a high rolling plain near the base of the Taunus

Mountains, in what was formerly the landgrave of Hesse-Hombourg. It is about an hour's drive over a fine carriage-road from Frankfort, and thirty-five or forty minutes by a branch railroad built expressly to facilitate communication between Frankfort and the springs. Hombourg, though a modern spa when compared with many of the other German springs, is now one of the most popular resorts of its class on the Continent.

Independently of the reputed virtue of its waters, it possesses sanitary elements scarcely equalled by any other bath-town in Europe. Standing out upon the verge of a rolling plain, which stretches up by a line of gentle ascent to the base of the mountain-range, the little town is fanned and kept comparatively cool during the summer months by fresh and invigorating breezes from these neighboring heights.

The immediate surroundings of many continental springs are abrupt and difficult of ascent, and the foot-paths and carriage-drives over which invalids seek so much of their recreation and exercise usually more or less difficult and fatiguing, but here no such feature exists. The plain in front of the town leads up to the mountain-base by the most gentle ascent, and the roads and foot-paths pass through forest-shade by long, gentle, and graceful curves, so that even the highest elevations may be reached and the most charming views

obtained with comparatively little effort. For those whose inclinations do not tempt them to these walks and drives amongst the mountains there are nearer at hand delightful places of resort for either exercise or quiet repose. The broad, sweeping park lying in front of the Kursaal, with its long stretches of green sward picturesquely broken by bosquets of forest trees and parterres of flowers, all connected by well-gravelled walks and supplied at convenient distances with benches embowered in shade, affords many delightful places where the weak or weary patient may enjoy at the same time charming landscape-views and the most soothing and genial atmosphere.

On the higher portion of the town stands the old Schloss, or residence of the former landgraves of Hombourg; the grounds attached to it are very handsome and quite extensive, and, being thrown open to the public, are much resorted to during the heat of the summer days on account of the cool shade and quiet, cozy nooks they afford. The old town built around the Schloss is neither handsome nor inviting as a place of residence, but the newer avenues, and especially the promenade and its intersecting streets in the direction of the springs, are not only wide and well shaded, but built up with lodging-houses evincing both luxurious comfort and fine architectural taste. The place is well supplied with good, comfortable hotels, the *cuisine*

of which is, as a rule, admirable and their other appointments all that could be desired. The lodging-houses, with few exceptions, are neat, clean, cheerful, and well-ventilated, and are adapted in their prices to the means of almost all classes of patients. Indeed, although claiming a tolerably thorough acquaintance with the watering-towns of Europe, I do not know a place where so much cleanliness, good cooking, bright sun, light, and cool, fresh air may be had, either in hotels or private apartments, for so little money, as here.

About midway in the Louise Strasse stands the Kursaal, the most extensive and imposing building of its kind on the Continent. It was originally built for public gaming, but now, since this has been prohibited, is devoted to the social entertainment of visitors. In all its plan, finish, and detail it is rich, and almost regal. There are now under its roof a handsome theatre, several reading- and conversation-rooms—formerly used for gaming purposes—a billiard-room, a large ball-room, and also a fine restaurant. A fine balcony extends along the whole façade of this building, fronting the mountain-range, and on the other side a wide hall of the same length, where during wet or otherwise unpleasant weather the *monde* usually takes its promenade. The wide balcony first mentioned presents an animated and agreeable scene during the height of the season. It is capable of seating

several hundred persons at a time, and here it is that visitors congregate to enjoy the fine prospect and the fresh air from the neighboring mountains, and also to eat, drink, chat, and otherwise amuse themselves during the lazy hours of the afternoon. There is a fine establishment connected with this building, where baths of the waters from any of the various springs may be had, the water for the purpose being brought there and artificially heated to the desired temperature; the bath, however, is regarded as of but minor importance in the use of these waters.

The springs of Hombourg are located at about five minutes' walk from the Kursaal, and are five in number—viz., the Elizabeth, the Kaiser, the Ludwig, the Louisa, and the Stahlbrunnen. A wide, well-shaded avenue leads to the Ludwig, Kaiser, Stahlbrunnen, and Elizabeth, the latter being at the extreme end of the avenue. It is from this spring that most of the visitors to this place come to drink; the water issues from the earth in the centre of a handsomely-built basin surrounded by a stone balustrade. A music-stand is placed upon the bank close at hand, where a band plays every morning during the season. Around the balustrade of this spring the eager crowd congregate during the morning hours to receive their appointed portion, which they slowly drink, and then turn off into some of the shady

foot-paths in close proximity for their digestive walk before taking another glass. There is also connected with this spring by a flight of stone steps a covered pavilion, leading up to an extensive greenhouse, usually well stocked with rare exotic plants. When the weather is not favorable for a digestive promenade amongst the flowers, this is the favorite place for exercise. All the springs of Hombourg rise from similar depressed basins, and are all handsomely walled about with cut stone, the Louisa-brunnen having in addition a very pretty canopy over it, supported by slender and graceful iron pillars.

The chemical constituents of these springs differ but little excepting in degree. They all, excepting the Louisa-brunnen, contain as their chief solid ingredient chloride of sodium, and all hold a considerable portion of carbonic-acid gas; they are clear, cold, and sparkling, and by no means disagreeable to the palate. The Elizabethen, although not regarded as the most highly mineralized, is decidedly the most active in its immediate effects upon the system, two or three glasses of it, taken in the morning upon an empty stomach, generally producing prompt purgation. The action of this water seems to be determined almost exclusively upon the mucous and muscular coats of the digestive organs, producing, usually, liquid discharges, and only partially relieving the bowels of the solid and impacted

contents that so often exist in cases of constipated habit. When taken in any considerable quantity their action is too prompt and spasmodic, and their properties not sufficiently solvent, to afford relief in such cases; nor do they seem to exert any special alterative action upon the liver in virtue of which structural change might be produced. They do, however, arouse and stimulate the functions of this organ, but their action in such cases is doubtless of a sympathetic character, reflected from the mucous coat of the intestinal canal, and not produced by their absorption and specific agency on its structural organism, as we have reason to believe is the case with the Carlsbad waters; hence they are very much inferior to these last-named waters as remedial agents for structural liver-disease. Indeed, it is doubtful whether any of these Hombourg waters are well adapted to the treatment of any form of glandular disease requiring for its removal alterative action.

There is, however, a class of full livers who from long and repeated over-indulgence of their gastro-nomic appetites, and from want of proper physical exercise, have become of a full, gross, and hyper-æmic habit—which condition is usually accompanied by a tendency to cerebral congestion and biliary derangement—and for such cases the waters of the Elizabethbrunnen constitute an almost sovereign remedy; for when taken to the extent of active

purgation they reduce the plethora of the general circulating system, and by their additional revulsive effect upon the bowels relieve the head, but this action must not on any account be too long continued, or it will produce a partial paralysis of the muscular coats of the intestinal canal, and result in a more confirmed state of abdominal torpor than before.

By a wise provision of Nature, physical exercise has been constituted the great agent not only for the elaboration of life-force, but also for the stimulation of those organs which have for their function the elimination of effete or noxious matter, and without a proper degree of this exercise in the open air neither these nor any other waters of this class will be of much durable service to such patients as are now under consideration. If, however, after having had the tension of the general circulation relieved and the abdominal viscera roused into activity by a moderate purgation, such patients will take a glass or two from this spring in the morning, and follow it up by free pedestrian exercise over the neighboring hills and valleys, and will continue this habit for a few weeks, they may reasonably expect to experience a degree of relief and returning strength and vigor that will more than compensate them for any sacrifice of indolent indulgence or gastronomic propensity they may have made.

There are various other classes of sufferers for

whom these waters may reasonably be expected to afford relief, and for whose condition they seem to be well adapted; prominent amongst which is what is generally denominated dyspepsia. Some of the most obstinate and distressing forms of this disease result from a weakened state of the mucous and muscular coats of the stomach and intestinal canal.

Such cases are usually characterized not so much by pain experienced as by an indescribable sense of oppression, distension, and uneasiness in the region of the stomach on taking into it even the smallest quantity of solid food. Liquids of any kind, if taken in any considerable quantity, and especially if cold, often produce in such patients the most distressing sensations, particularly in the head and nervous system.

These cases of dyspepsia are almost always attended with more or less of a sense of chilliness of the general surface after eating, and coldness of the hands and feet, with a feeble circulation on the general surface, as indicated by a bluish or purplish tint of the extremities.

The functions of the sensorium and reflex nervous systems also suffer, and this condition is usually indicated by ringing in the ears, flashes of light before the eyes, a general sense of uneasiness and agitation, with an utter inability to concentrate the mind upon any subject for any considerable length of time. The pulse also is greatly

quickened after eating, but without any strictly febrile symptoms or any other marked signs of inflammation. In an hour, or even two or three, after eating, and especially if much liquid has been taken with the food, if the stomach of such a patient be palpated, its contents will be heard to gurgitate and move under the motion and pressure of the hand as though they were in a completely flaccid and membranous bag.

It is a singular fact that this form of disease usually occurs in persons who have suffered from long, painful, and depressing nervous conditions rather than in those who have more or less injured their stomachs by improper eating and drinking. Under the influence of strongly-depressing circumstances the stomach rarely performs its work well; it not only fails in muscular strength, but the secretion of gastric juice, so essential to digestion, is often seriously impaired, if not almost entirely arrested, by such a mental condition. It may thus be readily seen how such influences so often become the source of this distressing malady. The same state, however, may be induced by the sudden bolting of food and the engorgement of the stomach with solid contents whilst the mind is actively occupied with absorbing thoughts, even of a pleasant or exciting character. In these cases the vital energy, which ought to be more or less concentrated upon the stomach during the process of digestion,

is drawn off to the brain by the busy thoughts of business-men, and the stomach, left to struggle as best it can with the ponderous mass of ingesta with which it has been suddenly flooded by a restless merchant or speculating adventurer, utterly fails in the task, and expresses its enfeebled condition by the symptoms above enumerated.

Now, for this form of dyspepsia, active purgation will only prove injurious, but a glass of the milder saline waters of the Ludwigbrunnen, taken at an early hour of the morning, and followed, after an interval of half an hour, by another from the Kaiser spring, which contains a little more iron, will act as a mild and healthful tonic to the weakened stomach; and if the general diet be moderate in quantity and light but nutritious in quality, this course, followed up with moderate exercise for a season of several weeks, will generally be attended by the most happy results, without any active purgative action whatever. But in the cure of these cases the occupation of the mind must perform an important part. Above all things, the entire nervous system should rest in a state of as quiet repose as possible for an hour or two after eating, and then some light and agreeable exercise in the open air should be taken. This exercise, if possible, should not be performed mechanically; the mind should be moderately but agreeably occupied in every excursion made, nor should anything be

resorted to repugnant to the taste of the patient; but, on the contrary, every light and harmless whim should be gratified.

Fortunately for this class of sufferers, Hombourg now possesses great resources for quiet and healthful exercise and recreation; but, above all, it possesses an atmosphere unsurpassed for an open-air life in the summer. I have become so thoroughly convinced of the superior air of this place that I believe there are many cases of the kind of dyspepsia just described, and also many of general debility without any decided local malady, that may be entirely cured by its simple inhalation, and a course of gentle but daily pedestrian exercise amongst the shady groves of its beautiful meadows and adjacent forest-clad heights, even without resorting to any of the springs.

Removed from the influence of any eddies of stagnant air, and exempt from malarious influences emanating from neighboring marshes or volcanic soil, this little town, bathed in a pure and healthful atmosphere, and swept by alternate breezes from the high rolling plain on the one side and the higher mountain-range that in the distance dominates it on the other, may be regarded, independently of its waters, as a sanitarium well worthy the consideration of all who suffer debility from any cause whatever; but, with the aid of its cold, sparkling mineral waters, it may be safely recom-

mended to all such as suffer from any form of functional disorder of the spleen, stomach, or liver. If such patients will but observe the general intimations above given as to the character and action of these waters, and also a sound sanitary *régime* in eating and drinking as well as in sleeping, they may reasonably hope to go away from this place in the possession of a degree of health and strength for which at home, with their apothecary and doctor, they have often sighed in vain.

Within very recent years this place has become a favorite resort for gouty and rheumatic patients, but neither my personal observation nor experience enables me to venture an opinion as to its merits in the cure of these forms of disease. Assuming, however, that the morbid matter of both these forms of disease may be eliminated from the system by a strong stimulation of the intestinal depuratory apparatus, as well as that of the skin, it is not improbable that this growing reputation of these waters is neither unmerited nor over-estimated.

KISSINGEN.

These justly-celebrated springs are situated in a fertile valley amongst the hills of Bavaria, about nine German miles from Wurzburg, and midway

between Wurzburg and Bamberg. They may now be reached by rail from Schweinfurth. The surrounding country is known as the Department of the Lower Main, or Franconia. The town is built on the banks of a rapid little river, called the Saale, which, gathering its waters from the Franconia hills, goes dashing by in sparkling glee to join the great German river, the Rhine. The smiling valley of bright-green meadows through which it passes, the lower slopes of the surrounding hills, clothed in rich and ripening grain, and the higher hillsides, with their luxuriant vines basking in the sun,—all contribute, during the summer season, to constitute a picture of beauty and agricultural wealth both pleasing to the eye and tranquillizing to the mind of the invalid compelled to sojourn here.

The fame of these waters in curing disease dates back to the sixteenth century. It is said that some time during that century the bishop of Wurzburg, having, at the recommendation of his physician, drunk of the waters of the one spring then known at Kissingen, was entirely relieved of his malady, and that, the cure of that important church-official being made known to the Catholic world, the fame of this spring was at once established. Be that as it may, the present reputation of these waters as curative agencies is beyond doubt.

There are now three springs used for drinking and baths—the Rakoczy, the Pandur, and the Max-

brunnen—but the Rakoczy is the most popular for internal use. The water from all three is clear, cold, and without appreciable odor. The mineral constituents of the Rakoczy and the Maxbrunnen are about the same, being chiefly the muriates of soda, potash, and magnesia, with slight traces of the sulphates and carbonates of lime and iron.

The Rakoczy is without doubt the spring *par excellence* of Kissingen at the present day. A pint of its waters contains about eighty-five grains of solid matter, chiefly the muriates of soda, magnesia, and potash, and about a grain of carbonate of iron. The water, as it issues from its basaltic bed, is perfectly clear, but when allowed to stand a while exposed to the air precipitates a brownish-yellow sediment. Its taste is strongly saline and slightly acidulous, inclining to bitter. It is around this spring especially that in the early morning may be seen the various types of suffering humanity that visit Kissingen for relief. Nowhere on the Continent, excepting, perhaps, at Carlsbad, are the representatives of so many nationalities and so many forms of disease to be seen as here. By auscultation, percussion, and other physical signs an intelligent physician may generally tell the true character of disease of the heart or respiratory organs, but for the recognition of a vast number of morbid, spinal, cerebral, and abdominal conditions science does not furnish so unerring a guide, and

hence to springs and baths are sent all those doubtful and undefined cases of suffering, in the hope that for them Nature in her arcana has perhaps prepared the remedy each requires, and will in her own way so arrange its therapeutical application as to produce a cure; and these springs certainly enjoy their share of the patronage of this promiscuous invalidism. Their waters, and especially those of Rakoczy and Maxbrunnen, when taken internally, do indeed fulfil certain indications that scarcely any other *materia medica* seems capable of accomplishing, for they combine in their effects a laxative stimulant and, indirectly, a fortifying action upon the abdominal viscera. They so stimulate the mucous and muscular coats of the stomach and bowels as to produce evacuation without exhaustion; and instead of a spasmodic and drastic purgation, resulting in a discharge of the fluid contents of the bowels, whilst solid impacted matter is left behind, they seem to penetrate and resolve this matter, and promote its removal by increasing healthy secretions and gently stimulating the peristaltic action of the muscular coat. In addition to this, by their absorption into the general circulating fluid they seem to quicken both the secreting and the depuratory systems of the entire economy, thus arousing to normal and healthy action general functional power; which is always a desideratum in the treatment of a suffering organ. Under their influence

the excretions from the surface become more abundant, frequently viscid, and in some cases of a peculiarly offensive odor; the secretion of urine is increased, its color changed, and its specific gravity often greatly altered. Under these circumstances, it is usually found loaded not only with its natural salts, but also with what would seem to be effete organic matter, not having been entirely resolved into chemical conditions, and consequently emitting an odor peculiar to animal tissue. The change in the secretions from the liver is usually evinced by the dark bilious matter manifested in the intestinal discharges; but this is not generally observed on the first essay of the water, nor until after the system has become more or less saturated with it.

Kissingen, as may be inferred from this action of its waters, is much resorted to for the cure of diseases of the liver, with or without enlargement; for enlarged spleen, the result of pre-existing intermittent fever; for chronic diarrhœa, depending upon atony of the digestive apparatus or a morbid condition of mucous secretions; for old cases of dyspepsia, attended with constipated or irregular bowels, furred tongue, flatulence, loss of appetite, and difficult digestion; and for all that train of painful and distressing nervous impressions resulting from these and a host of other abnormal disorders.

For that form of gout unattended with articular deposition, and for all the various forms of mus-

cular and articular rheumatism resulting from long exposure to cold and damp weather, as well as for cases of erratic pains, where there is a suspicion of an existing vice in the blood, without having declared itself by any local inflammation, these waters, though not popularly regarded as so efficacious as those of Wiesbaden, are well worthy of a trial; but to exert a good effect their use must be carried to the full point of saturation, and that condition kept up for some time, so as to secure their proper depurative and alterative agency. In chronic cases, both of gout and rheumatism, when articular deposition has already occurred, combined with the warm bath, it is probable that these cold waters, taken internally, will prove quite as efficacious in relieving local suffering as the thermal springs claiming particular merit for the treatment of these special forms of disease.

Many functional disorders without clearly defined local origin, but which, nevertheless, entail great physical pain and general bad health, find speedy relief here also, especially if the waters are taken in connection with a proper abstinence from all disturbing or depressing influences, whether of mind or body, such as violent exercise, exposure to chill night-air, imprudence in diet, drink, or clothing, or late hours spent either over exciting novels, cards, or other games of chance.

Fortunately for invalids who visit Kissingen,

there is less inducement to commit these excesses than at many other similar places. Public gaming has never been an institution of the place, neither has it ever been regarded as a fashionable resort for the gay and frivolous; consequently, the temptations to hurtful dissipation are probably less here than at any of the other popular springs of the continent.

There is another spring or well here, called the Sprudel, which merits a passing notice. It is situated a few minutes' walk from the town. Its waters are chiefly used in connection with those of the Pandur for bathing-purposes, and for this a fine establishment has been erected on its site, where all kinds of baths are given, including the mud-bath, of the superior merits of which I have some doubts.

Kissingen, although not gay, is by no means a dull or uninteresting place of sojourn. It has a fine Kursaal, about eight hundred feet long, presenting a handsome colonnade throughout its entire length. A large and beautiful hall occupies its centre, where *fêtes* are frequently given to visitors. The town is well built, the streets wide, and the hotels, *pensions*, and private lodgings comfortable, whilst the charges are by no means exorbitant. The valley in which it is situated presents, as before mentioned, a cheerful aspect, and the surrounding hills much of the picturesque and beautiful, so that an invalid compelled to make his sojourn here

need not fear the absence of rational and pleasing sources of recreation.

CARLSBAD.

This ancient and celebrated bath-town is situated in a deep valley of Bohemia surrounded by picturesque heights clothed to their tops with luxuriant forest-growth. The fantastic outlines and bold character of these surrounding hills, in many instances broken into irregular and detached cliffs, invest the locality with great natural beauty. The Tepel, a small and limpid stream traversing the valley, separates the town into two distinct quarters, which are united by a number of handsome bridges. As it passes through the town the river is diked, so as to confine it in as narrow limits as possible, and between these dikes and the adjacent precipitous hills the chief shops, hotels, and lodging-houses are built.

Independently of thermal waters, Carlsbad combines a number of elements calculated, in a high degree, to impart health and vigor to constitutions rendered feeble by the exhausting influences of the anxious care and constant labor so incident to the lives of many of the men of the present day. Remote from any large city or great thoroughfare of active life, and situated in the midst of these Bo-

hemian hills, it is admirably suited to a summer sojourn for this class of invalids, who usually require only rest and quiet recreation in order to complete recovery.

In addition to the variety of the natural scenery of the place, the municipal authorities and other interested individuals have located, at almost every picturesque point of the environs, handsome and attractive restaurants, where refreshments may be had at a reasonable price during the season, and where a delicious cup of coffee may always be obtained. The pedestrian excursions that may be daily made through the surrounding forest, and the morning walks along the banks of the little river to these restaurants for a breakfast under a canopy of forest foliage and within sound of the flowing, bubbling waters, are enough in themselves to work a cure for many of the class of invalids above mentioned; but, unfortunately, there are many forms of invalidism which require a more heroic treatment, and to this place such cases annually resort in the hope of being cured by a regular course of the waters. These springs, although differing in name, differ but little in the composition of their waters; they are all warm, and the Sprudel at least is positively hot. This spring starts from a point near the bed of the little river, and with great force projects from the surface a column of water several inches in diameter. It

contains, as do all the others, chloride of sodium and the sulphate and carbonate of soda as its chief solid constituents, with considerable traces of iron and magnesia. The waters of all these springs are perfectly clear and without odor, and have a slightly alkaline taste by no means disagreeable to the palate.

From this summary of their solid constituents, it must not be inferred that they are not potent agents in producing constitutional disturbance when taken into the stomach. On the contrary, if taken injudiciously, they often produce distressing, and sometimes dangerous, effects.

As I have already remarked, it is very probable that agents exist in most mineral waters for the detection of which the science of chemistry has not yet discovered the clue, but upon the action of which much of their potency depends; and the unpleasant and painful impressions these waters often produce upon the brain and general nervous system after being taken a few days would seem strongly to favor this theory.

Carlsbad has long been the resort of invalids suffering from chronic disease of the liver, spleen, stomach, and other abdominal viscera; and as diseases of the abdomen generally, even in their earlier stages, more or less affect the *morale* of their subjects, rendering them despondent, melancholy, and morose, this may be regarded as the *triste* ren-

dezsous *par excellence* of Europe for this legion of sufferers.

At an early hour of the morning may be seen congregated around these streaming waters a motley crowd of all nationalities—Greeks, Turks, Russians, Germans, Italians, Spaniards, Englishmen, and Americans; some pale and emaciated with long suffering from malarial diseases, others with every tint of jaundiced complexion, from a faint straw-color to the deepest copper tinge; some with huge enlargements of the liver or spleen, rendering them almost incapable of motion, and still others with that impress of dejection engraven upon every lineament of their countenance which constitutes the unmistakable index of intense and protracted suffering from grave stomachic or intestinal disease. At most other continental springs one may see amongst the morning throngs many who drink in an indifferent manner, but at Carlsbad all seem terribly in earnest as they crowd around these steaming waters.

The usual mode of taking them is to slowly drink one glass or portion, walk for ten or fifteen minutes, and then repeat the quantity, after which again a promenade of fifteen minutes, and so on, until from two to four or six glasses are taken, as by a little experience the invalid will discover the quantity his stomach will best tolerate.

However insipid and apparently harmless these

waters may appear from their taste, experience will soon prove that they must be taken with prudence and caution; two or three glasses of the Sprudel, and indeed of the Millbrunn, which in its effects is not regarded as so strong, will often produce a sensation of tension and giddiness in the brain which is extremely disagreeable, if not dangerous. After the use of any of these waters for a few days most persons will experience a sense of discomfort, nervous prostration, and mental disturbance in such a degree as to seriously alarm them. This, however, should not induce them to stop their use entirely unless experienced in an aggravated degree; but if these symptoms persist in a strongly-marked form, then I think it would be well to stop the use of them, for a while at least.

An hour ought always to elapse between the taking of the last morning glass and the breakfast, which should consist of bread and coffee with eggs or a chop, or some such light and digestible food. Much of the proscriptive injunctions of the local medical authorities I think unnecessary; the rule most safely to be followed in regard to diet is to eat moderately of such food as past experience has shown to be the least hurtful. Strong drinks ought not to be indulged in, or intemperance of any kind, whether in eating, drinking, or exercise, nor should the mind be seriously occupied with any strongly-exciting subject. Games of hazard, being

always attended with more or less undue excitement of the mind, should be scrupulously avoided. The experience of every sufferer will have previously proved to him that certain of his habits or modes of life have been injurious; all these he should here abandon, and try to aid the specific local influences in the promotion of his cure by that regularity of life which most conduces in every case to health and rational enjoyment.

I am not disposed to attempt to explain how huge enlargements of the liver or spleen have disappeared under the use of these waters, or how the sallow complexion and despondent countenances of jaundiced and dyspeptic sufferers have been lighted up with the light of life and health.

Learned essays have been written to explain the *modus operandi* of these cures, and all kinds of specific agencies have been attributed to the different springs here found, many of which are too absurd to recommend themselves to the faith even of the most credulous. But as all medication is more or less mysterious in its action and result, the effects of these mineral waters of Carlsbad, with the other concomitant physical and moral influences made available here, may involve a therapeutical mystery yet to be explained. That they do have a peculiar action upon the liver can scarcely be doubted; for, without being strictly purgative, they almost invariably produce dark discharges,

moderate in quantity, but of such characteristics as to prove beyond doubt that biliary excretion enters largely into their composition. It is probable that by some electric affinity some of their constituent elements are carried more directly to this organ, which, by stimulating it to increased secretive action, restore the equilibrium of its various fuuctions, and thus promote the removal of hypertrophy and structural engorgements.

In addition to the Sprudel, there are the Muhlbrunnen, Marktbrunnen, Schlossbrunnen, and Thersianbrunnen, all located on the opposite side of the little river from the Sprudel. Each of these springs is popularly supposed to possess some specific virtue adapting it to some one or other of the peculiar forms of disease for which the others do not possess the requisite quality, and around each of them may be seen grouped at the same early hour of the morning the devotees of their peculiar sanitary shrine, who would not upon any account depart from the formula which directs their languid footsteps to that particular spot. That there is great absurdity in the nice distinctions made by medical men in prescribing these springs to their patients I have no doubt, but that from the temperature of the waters or the whimsical fancy of the patient, or some other influence, one spring produces upon the invalid better effects than another I cannot but admit; and as faith in the agent employed, however

unphilosophical it may be, often greatly contributes to its potency, it will be a safe rule to drink of the spring which most inspires this faith, whether this inspiration result from the traditional cures produced by it, the recommendation of the doctor who prescribes it, or the inexplicable conviction that elects it.

Finally, upon the waters of Carlsbad, I would say to the invalid reader, If you are suffering from jaundice, engorgement or other derangement of the liver, enlargement of the spleen, chronic dyspepsia with a torpid condition of the bowels, or from bad health of any kind which you suspect to proceed from some form of abdominal disease, the cure of which has baffled the treatment of your medical adviser at home, pack your trunks, if your circumstances will permit, and hie away to this picturesque spot amongst the mountains of Bohemia. It may be that for you, as for many others who have preceded you, Nature has there stored away in the deep fountain-sources of the Sprudel, the Muhlbrunnen, or some of the other springs of the place, the curative agent you have elsewhere sought in vain.

MARIENBAD.

This pleasant little town is situated in the midst of a wide and pretty valley, through which flow

the bright waters of the Stienhaubach. It is about sixteen miles, over a fine carriage-road, from Carlsbad, and may be reached from the Egar station of the Frankfort and Bamberg Railroad in about four hours' drive. Although its immediate surroundings are not so bold and picturesque as those of its famous rival, Carlsbad, they nevertheless present an assemblage of features peculiarly agreeable during the summer season. The wide, open valley with its stretches of greensward interspersed with clumps of trees and shrubs, and the gently-rising hills clothed in rich forest foliage, impart to the place an air of substantial comfort.

There are here no less than seven springs, the waters of which are cool, clear, and sparkling. They all more or less resemble in their chemical constituents those of Carlsbad; indeed, so nearly do they approach them in these qualities that Marienbad has not inappropriately been called the Cold Carlsbad. But the several springs of Marienbad differ from those of Carlsbad in that the quantity of solid constituents of the waters of each differs from that of the other much more than do those of Carlsbad. An analysis of the Kreutzbrunnen—probably the most important, and certainly the most popular at the present time—shows that its principal solid constituent is the sulphate, and next to that the muriate, of soda, the third in importance being carbonate of soda. This spring was the first dis-

covered in the place. It rises on the margin of the valley, in what was once a marshy quagmire, through which the drinkers had to pick their way as best they could to obtain the waters, but it is now one of the most ornate spots in the place. The spring issues from the centre of a basin surrounded by a handsome circular colonnade, supporting a rotunda; this pavilion is connected with a covered promenade, where the crowd of drinkers usually take their exercise in bad weather whilst taking the water.

About three-quarters of a mile from the spring, near the base of the hill, the Ferdinandsbrunnen rises beneath an elegant pavilion. The way from the Kreutzbrunnen to this spring leads up the valley through fine forest shade, and affords a most agreeable walk.

The two springs just mentioned belong to what are here known as the saline or purgative sources. Two others, denominated the chalybeate—viz., Carolinen and Ambrosius—rise near the centre of the town, and supply one of the important bath-houses of the place. There are yet two others—the Marienbrunnen and the Waldquelle—which are styled the acidulous springs of the place. The former of these is very rich in carbonic-acid gas; its waters supply the baths of what is known as the old bath-house, and are warmed by artificial heat to the proper temperature. The Waldquelle rises in the forest, on a neighboring hill, and is

approached from the town by pleasant and shady walks, which extend through the surrounding forest in many directions and are well supplied with benches, where the feeble or fatigued may rest in their pedestrian exercise under a cool canopy of forest shade.

The Kreutzbrunnen is the spring usually resorted to for gastric or intestinal torpor attended with suspected congestion of the portal system. Its waters are regarded as especially efficacious in cases of timidity of the abdomen, with furred tongue, loss of appetite, eructations, and sense of oppressive fulness after eating; all of which symptoms so often accompany simply deranged secretion and indolent habit of the abdominal viscera. Being more purgative than any of the Carlsbad springs, the Kreutzbrunnen is better adapted to the removal of constipation, which in confirmed cases always acts injuriously upon the normal secretions of the mucous membrane and paralyzes the peristaltic action of the muscular coats of the bowels, upon which so greatly depend the healthy functions of these important viscera.

The Ferdinandsbrunnen has almost the same solid constituents as the last-mentioned spring, only in not quite so large a proportion; its waters are therefore taken for the same class of complaints, the choice being usually determined by constitutional tolerance, but in most cases where

a purgative action upon the bowels is desirable the Kreutzbrunnen should be preferred.

The Carolinen and Ambrosius springs contain much more gas than either of the two previously named, as well as more iron; they are therefore regarded as more fortifying and better adapted to anæmic subjects suffering from functional derangements. The large proportion of gas and iron these springs contain acts upon the stomach and intestinal canal as a stimulant tonic, and prevents that exhaustion and debility which the more purely saline waters of the Kreutzbrunnen or Ferdinandsbrunnen would induce in such subjects. For the removal of structural change, either in the liver or spleen, and for that alterative action on the mesenteric glands and secreting vessels of the other abdominal viscera upon which the cure of so many painful maladies depends, I do not think that the Marienbad waters, internally used, are equal to the thermal waters of Carlsbad; but for mere torpor of the abdominal viscera and sluggishness of their functional action, which so often, when neglected, lay the foundation of structural change, I think them equally well suited.

Although the Marienbad waters are cold and for the bath require to be artificially heated, yet such is the provision here made for this mode of their application, and so superior are the bath-arrangements of this place to those of Carlsbad,

that, with the advantage of natural temperature of its waters, it may be doubted whether any better results are obtained in many forms of disease from the baths at Carlsbad than from those here.

Not only have the waters from several of these springs been made available to the patient in every form of local application, but the gas they contain has been utilized for this purpose. The impregnated soil of some of the localities around the town has also been made to subserve the same purpose, and it is here that what is known as the mud-bath is most in vogue. For this purpose the vegetable soil in the vicinity of the springs, which has been saturated with their saline constituents, is collected and put into the bathing-cabinets, where it is again submitted to a fresh process of saturation, until it has been reduced to a proper consistence and given a temperature suitable for the bather. Into this he plunges, and there remains immersed, excepting his head, for such time as the local medical adviser has prescribed; he then plunges into a contiguous water-bath—always in the same cabinet—and cleanses his skin of the adhering gummy matter. I confess it is somewhat difficult to determine what superior qualities these mud-baths possess over those of water of the same temperature; yet so utterly incomprehensible is the action of much that is called curative agency that I will not here venture to question the efficacy of the

mud-bath. It is claimed by some that, as mud is a bad conductor of caloric, these baths may be used at a higher temperature than water could be well borne. That they act, when at a proper temperature, as an emollient to the general surface, without the vivid and exciting action upon the skin that heated water usually produces, is doubtless to some extent true, and it is probably in virtue of this that the sedative action upon the circulation claimed for them is produced. When heated, however, to a temperature above that of the blood, it may be conceived that they become exciting and oppressive, and in certain cases even dangerous; but when used at or a few degrees below the temperature of the blood in simple congestion of any internal organ, either passive or subacute, their action ought to be, and often doubtless is, revulsive and sedative, and in the end beneficial.

These baths are said to be especially adapted to the treatment of some forms of skin diseases; but, whilst they may be conceded to be of great service as adjuncts in the treatment of the obstinate kinds of these diseases, I cannot imagine them capable of eradicating from the blood, unassisted by internal remedies, the vices upon which so many of them depend.

For the relief of local pains in the joints or elsewhere, and for all cases of partial ankylosis, as well as for local indolent swellings and indura-

tions, the topical application of this medicated mud is doubtless often of great service, and is well worthy of a trial.

GASTEIN.

Situated about eight or ten hours' drive from Salzburg, in a narrow valley high up amongst the Styrian Alps, and almost beneath the fleecy spray of a mountain-cataract formed by the falling waters of the Aache, this little town continues to attract a large annual stream of visitors from all parts of the Continent during the hot months of summer.

Being about three thousand feet above the level of the sea, and surrounded on almost every side by high mountain-ranges whose summits are for a large portion of the year capped with snow, the atmosphere of this narrow valley, even in midsummer, is crisp, cool, and bracing, excepting for a few hours in the middle of the day, when the sun is quite hot. The great altitude of the valley, and the high surrounding mountain-ranges, over which the sun rises at a late hour of the morning, and behind which it disappears early in the afternoon, secure for it great exemption from the hot and oppressive atmosphere of lower and more open localities exposed to the sun's rays, but at the same time induce a diurnal alternation of temperature that requires to be carefully guarded against by delicate persons.

The immediate environs of Bad-Gastein, although wild and precipitous, are extremely picturesque and interesting, and afford, for those whose strength will permit, healthful pedestrian excursions. Though quite hidden away amongst these mountains and more difficult to approach than almost any other continental bath-town, the reputation of its springs is such that during the season—which is always short—the place is thronged with visitors, and not unfrequently persons have to be turned away for want of accommodation.

The springs of Gastein, probably better than any others on the Continent, illustrate the fact that mineral waters do not always produce sensible effects in proportion to their solid constituents or mineralization; for we have here a thermal water with scarcely two grains of solid matter to the pint, and scarcely differing in any appreciable quality from common distilled water, for centuries attracting crowds of invalids from all parts of the world, and sending them away from year to year living witnesses not only of its curative qualities, but also of the strong sensible impressions they have experienced under its use. Much of this curative agency and many of the impressions experienced may justly be ascribed to the imagination of credulous patients, and doubtless much of that which has been ascribed to the direct influence of the waters has been produced by the tonic, bracing air of this high mountain-val-

ley and the complete revolution wrought upon the entire nervous system of invalids by the grand and imposing scenery of the *entourage* of the place; but, notwithstanding this, it is impossible to believe that the generations that have during centuries past gone away from the baths in the full faith of their curative power have all been the dupes of their own imagination. There can be but little doubt, therefore, that there are in these waters some subtle agents, yet undefined by chemical test, upon which much of their curative effect depends, and this would seem to be especially presumable if the magnetic phenomena and the power to revive lost color and vitality to faded flowers claimed for them be facts; and they seem to be tolerably well verified by good and credible witnesses.

There are, in all, here in this little valley and the adjacent hillsides, I believe, eighteen different springs, varying somewhat in thermal degree, but identical in their solid constituents. They range in temperature from 80° to 100° Fahrenheit. Quite a number of public and private bathing-establishments, for both male and female patients, have been provided; and, as at almost every other bath-town, there are here baths for a great number of special forms of disease. This may be regarded as the weak point in all the claims set up by interested or prejudiced parties for mineral waters generally.

Amongst the more prominent morbid conditions

for the relief of which these baths are claimed to be most efficacious, I may mention nervous prostration with great irritability, hysteria, hypochondria, cerebral and spinal irritation, impotency in youth, and premature decline of vital force in more aged persons, including paralysis resulting from local or general prostration of nerve-power. They are also reputed to be highly efficacious in the treatment of neuralgic, rheumatic, and gouty pains, and in the removal of small urinal calculi from the bladder. For causes of great vital prostration, resulting from over-work or any of the various forms of dissipation, I have no doubt that a moderate use of these warm baths, especially if combined with frequent excursions in the open air amongst the surrounding mountain-scenery and a plain, nourishing diet, would be highly beneficial. For certain forms of cerebral and spinal irritation, with their train of morbid nervous phenomena, I also believe them to be of undoubted value. But for the rejuvenation of age, and the reinvestment of men with lost functions of virility, and of women with those of fecundity, for which they have such a reputation, I have only to say that such patients must look to the *ensemble* of influences found at Gastein rather than to any one source claiming these specific virtues.

Far removed from the popular resorts of fashionable life and centres of dissipation, which, if they are not the cause of their conditions, are frequently

their occasion, and shut in, as it were, amongst these grand and imposing mountain-solitudes, the individual *blasé* with the scenes of artificial life and *epuisé* of vital force by an over-indulgence in them, is compelled, for the time at least, to seek his companionship amongst the rocks and dells, the wild-flowers of the mountain-side, the tumbling cascades of bright, sparkling mountain-streams, and all that variety of new and interesting objects of Nature that lie hidden away in these calm retreats; and thus, his mind being diverted from the sights and sounds of sensual life, his body becomes invigorated in proportion as the new life around him engrosses his attention; and in these influences, combined with the daily use of these soothing yet gently-stimulating waters, is the secret of restored vitality to this class of patients for which Gastein is the boasted source.

TEPLITZ.

This little bath-town of Bohemia may be reached by a branch road leading off from the main line of railroad between Prague and Dresden at Ausig. The waters of its springs, as well as those of Shoenau, in the immediate neighborhood, are denominated "indifferent," possessing, like Gastein, but a slight degree of mineralization; yet, notwithstanding this fact, they are considered quite powerful in

their effects, and are amongst the most popular of Germany. Teplitz is at present not only a kind of international military bath-town, but in its past history it has been the scene of several international diplomatic events. It was here that Russia, Prussia, and Austria, in 1813, signed the famous treaty of alliance against France which finally resulted in the downfall of Napoleon. Prussia, Austria, and Saxony have each here a military hospital for the treatment of their sick soldiers, and especially for those who suffer from the effects of old gunshot-wounds; and thus the place seems now to avenge itself for the outrage of war, perpetrated through that treaty, by offering its healing waters, without money and without price, to the soldier suffering from the effects of war-missiles.

There are in this place ten or eleven springs, divided about equally between Teplitz and Shoenau. The Hauptquelle has the highest temperature, being about 40° Fahrenheit, and the Gartenquelle the lowest, having only about 26° Fahrenheit. They all contain a small quantity of slightly-alkaline salts, are clear, and almost without taste or odor. Though not so frequently taken internally as some of the more strongly mineralized waters of the Continent, they are extensively used for baths, and for this purpose, in the more modern town of Shoenau, some of the most elegant and commodious bath-rooms of Europe have been erected.

For many kinds of skin-disease, and especially that morbid condition resulting from impaired circulation in the surface capillaries of aged or infirm persons, these soft and slightly-stimulating tepid waters are peculiarly adapted. They are also said to be of great service, when used internally in connection with the bath, in breaking up and resolving congestions of the liver, spleen, or kidneys unattended by permanent structural change. For the cure of chronic diarrhoea, the result of exposure, bad food, and other depressing influences to which soldiers in the field are exposed, they have quite a reputation. This latter form of disease is usually accompanied by chronic inflammation of the mucous membrane of the intestinal canal and a sluggish and congested state of the mesenteric vessels. Though always difficult to manage, a persistent course of the warm bath and the daily internal use of the waters have been known to produce cures amongst the soldiers of the military hospitals in apparently the most hopeless cases.

Amongst the soldiery of all armies there is a host of nondescript morbid conditions produced by the influences above mentioned, together with the dissipations invariably incident to the soldier's life, which, though not of sufficient distinctive characteristics to be localized upon any one organ, yet produce a general functional derangement that if long continued usually results in strongly-marked local

disease or a cachectic state. For such cases as these the military hospitals of this place are admirably suited. In them the soldier is not only relieved from duty, but is brought under the influence of regular habits, good diet, and proper cleanliness, whilst the water, freely taken internally and applied to his external surface in the form of the bath, often entirely expurgates his system of the lurking virus or vitiated secretions that have possessed his blood, deranged his vital functions, and brought upon him impaired health.

MINOR SPRINGS OF GERMANY.

As I have already expressed the opinion that a description of all the mineral springs of the Continent claiming curative virtues could only prove monotonous and weary the reader, I shall here only mention a few of the German springs commonly regarded as holding a secondary rank of importance.

First amongst these I may mention Schlangenbad, a small village, or rather hamlet, situated in a secluded and picturesque little valley amongst the hills of Rhenish Germany, about an hour's ride from Schwalbach. The waters of these springs are reputed to possess the power of imparting to the skin of the bather a peculiar delicacy and softness, and are usually resorted to by fashionable ladies

ambitious to improve the whiteness and delicacy of their complexion.

Weilbach.—A little village between Frankfort and Mayence with a cold sulphurous spring said to have a peculiar elective action upon the mucous membrane of the uterine, urinary, and bronchial mucous membranes, but especially prescribed for diseases of the respiratory organs.

Sodön.—About an hour by rail from Wiesbaden, and situated in a delightful valley at the base of the Taunus Mountains, Sodön possesses about twenty springs, all of which contain chloride of sodium as their principal mineral constituent. They are chiefly reputed for their beneficial action in strumous or scrofulous cases, in virtue of the traces of bromine and iodine they are said to contain.

Kronthal.—Situated at the base of an outlying hill, on the north-east of the Taunus range. These waters are cool and gaseous; they also contain chloride of sodium as their chief mineral ingredient, and are applicable to the treatment of the same class of diseases as are all other springs of this character.

Kreuznach.—Located in a rather uninteresting valley on the left bank of the Rhine, and about an hour from Bingen. This place is the seat of large salt manufactories, and, although the chief solid constituent of its waters is chloride of sodium,

they also contain slight traces of both bromine and iodine. It is from the supposed agency of these latter elements that these springs chiefly derive their reputation. They are said to be efficacious in the treatment of strumous tumors, scrofulous eruptions, and glandular swellings of a cachectic character, and do seem to possess great virtue in the treatment of this class of diseases.

Nanheim.—Situated in the valley of the Wetterau, at the eastern extremity of the Taunus range, about an hour and a half from Hombourg over a finely-macadamized road. The springs of this town have been used for more than a century for the purposes of salt manufacture, and hence, as may be inferred, their chief solid constituent is the chloride of sodium; they are warm, and some of them issue from the surface in large volume and with great force. As at Kreuznach, these waters contain considerable traces of bromine and iodine, and some of them quite a percentage of iron. Although they are taken internally, their chief use is in the form of the bath, for which purpose large and commodious bathing-houses have been established, where, without artificial heat, the bath is regulated to the required temperature. These waters have the reputation of being useful in a large category of diseases, chief amongst which are glandular swellings, enlarged joints, scrofulous tumors, and eruptions; they are also highly ex-

tolled in cases of anæmia, chlorosis, and suppressed menstruation.

Baden-Baden.—By a branch railroad of about five miles from the main line leading from Heidelberg to Basle the traveller may reach this charming watering-place. It may seem strange to the reader that a place formerly of such renown as a health resort should be here classed by me amongst the mineral springs of secondary importance on the Continent, but as curative waters I do not think them entitled to a higher rank. The town is situated in a beautiful valley of the Oos, and is surrounded on all sides by exquisite natural scenery, which, with its architectural structures, its fine hotels, Kursaal, villas, gardens, and promenades—the result of a lavish expenditure of money during the existence of the gaming-tables at this place—constitutes the chief attraction of Baden.

Around no springs in Europe are there to be seen greater natural beauties, nor has there been at any one of them a greater expenditure of money in adding artificial embellishments and attractions; consequently, Baden-Baden, notwithstanding the abolition of the gaming-tables, still continues to attract many summer visitors from all parts of the world. Its mineral waters in some respects resemble those of Wiesbaden, and belong to the class of warm saline springs; but they are greatly inferior to those of Wiesbaden in their effects upon the

system, and as curative agents are at the present day being gradually abandoned. But the beauty of the situation and its immediate surroundings will doubtless long continue to invite the *beau-monde* to this charming valley. It must not be forgotten, however, that during the midsummer heats the atmosphere of the place is close and frequently very oppressive; consequently, for persons requiring a tonic and bracing air, however attractive the place may be, it is not a proper residence.

SWITZERLAND.

Swiss Baden.—This ancient little town of Switzerland, situated a short distance from Zurich and near to the railway, enjoys quite a reputation as a bath-town. Its springs, which are warm, contain chloride of sodium and the sulphates and carbonates of lime in considerable quantities. The hotels have all convenient arrangements for the bath, into which the waters are conducted from the springs. Although this place is greatly frequented during the summer both by French and Swiss, and great virtues are claimed for its waters in the treatment of rheumatism and other kindred diseases, it is doubtful whether they equal for this purpose some of the thermal springs of Germany already mentioned.

Schiuznach, a small place near to Swiss Baden, aspires to great consideration in the treatment of skin-diseases, in virtue of the considerable quantity of sulphuretted hydrogen its waters contain. Excellent arrangements for the bath are here provided by the canton authorities. There are no public hotels, nor is there any provision made in the town for any but invalid visitors. In addition to sulphuretted-hydrogen gas, these waters contain a considerable quantity of sulphate of soda. They are said to be quite efficacious in the treatment of many stubborn forms of skin-disease, and for all such complaints as are at all amenable to the action of sulphur they ought to be most valuable springs, for they contain in solution, at a temperature of about 96° Fahrenheit, more sulphur—Challes probably excepted—than any other springs on the Continent.

Aix-les-Bains.—Situated in the midst of a wide valley, surrounded by fine Alpine scenery, and on the main line of railroad from Geneva to Mont Cenis, this ancient bath-town continues to hold a prominent position amongst the summer resorts of the Continent for invalids. Its springs are denominated sulphurous, although they contain only slight quantities of any kind of solid constituents, and but the merest trace of sulphur. At no bath-town on the Continent can there be found a greater variety of arrangements for the application of thermal waters

and hot steam to the patient; consequently, believers in the specific agency of the bath congregate here annually in great numbers. That these springs, notwithstanding the small quantity of their mineral constituents, possess virtue in the treatment of certain chronic forms of disease seems to be well established, but it is highly probable that much of their popularity may depend upon the material and moral adjuvants of the place rather than upon the specific agency of the waters. It is a pretty town, situated in the midst of picturesque scenery, with good and cheerful hotels and *pensions*, where all the comforts and luxuries of life may be enjoyed at a moderate cost; besides, the vast importance attached to the multitudinous uses of its waters is calculated to inspire the invalid with confidence in their virtues and induce him to submit himself to a prescribed *régime* with perfect resignation; which in itself is of great importance to the majority of invalids.

Rheumatism and its kindred complaints are usually treated here, and with the use of the waters, added to the other influences pleasantly affecting the nervous system, it is an undisputed fact that many patients go away from the place annually greatly relieved, if not entirely cured.

Statchelberg, at an elevation of about two thousand feet above the sea-level, is situated in the Lui valley, Glarus, and in the midst of the most

imposing scenery of Switzerland. Its waters are sulphurous and are chiefly used in the treatment of skin-diseases, for which they are very popular, the place being crowded during most of the summer months. They are said to be efficacious in chest affections also, but, from what I have already remarked on the treatment of these affections, I cannot recommend them.

Challes, situated about three miles from Cambery, in a fine, picturesque country, commanding splendid views of the Alps, is destined, without doubt, yet to take rank amongst the most renowned mineral springs of Europe.

An enterprising company from Cambery now owns these springs, and is spending large sums of money in embellishing the grounds and providing good accommodation for invalids. They have bought the old château of Challes and converted it into a fine hotel with all modern improvements, where visitors may be made very comfortable at a moderate cost.

The mineralization of these waters is quite remarkable. They contain more sulphur than any other in Europe, chiefly in the form of sulphurets of sodium; they also contain considerable traces of iodine and bromine, two of the most influential remedies of the *materia medica*. Their action, when taken internally, is diuretic and depurient, increasing to a marked degree the secretions of both the skin

and kidneys, but their directly alterative effect may be regarded as their most important quality.

In certain stubborn skin-diseases they have been found very efficacious, and in torpor of the portal system, with depraved or vitiated mucous secretions of the intestinal canal, they often produce the best results. But the morbid condition for which I believe them to be pre-eminently suited is that of secondary or tertiary syphilis. Most remarkable cures of these forms of this disease have recently been performed by them.

Like most other sulphur springs, they have been recommended for rheumatism and gout, and in many such cases they are said to have produced cures. When the place becomes better known, and more extensive accommodation is prepared for visitors, I have no doubt Challes will stand in the first rank of mineral springs for alterative and depurative agency, and especially for the treatment of secondary and tertiary syphilis.

FRANCE.

I shall now pass to the consideration of some of the more prominent baths and springs of France, omitting a description of many, and especially of such as have their counterpart amongst those of Germany and Switzerland already described.

VICHY.

This famous bath-town is situated in the department of the Allier, about two hundred and fifty miles south-east of Paris, and on the banks of the river Allier. The springs of Vichy occupy the very first rank amongst the alkaline waters of Europe. Their chief solid constituent is carbonate of soda; they also contain small proportions of the carbonates of magnesia and potash, chloride of sodium, and carbonate of lime, with traces of other salts: it is, however, from the presence of the first-mentioned constituent that they have derived their distinctive character as curative waters. There are here no less than twelve different springs, but all are so nearly identical in their mineral composition as to render a separate description unnecessary. Of the different classes of thermal springs on the Continent, the alkaline are the least numerous, and Vichy, standing pre-eminently at the head of this class, and located in the centre of a great country, amongst a people homogeneous in their language and manners, and, above all, so accessible from Paris and other large continental cities, would naturally be expected to play an important rôle amongst health resorts; and such it unquestionably does, for no place on the Continent can boast so large a number of annual invalid visitors, nor at any other has a larger amount of

money been expended in developing its resources, embellishing its grounds, and otherwise providing for the comfort of the invalid and the gratification of his æsthetic tastes.

Situated in the midst of rather uninteresting scenery, and on the low bank of a river subject to annual overflow, it has required vast sums of money to make it what it now is—a most agreeable and attractive spot. There is here what is called “La Compagnie Fermière de l’établissement thermal de Vichy,” with a capital of several millions of francs, and to the improvements made by this company in providing for both the material comfort and the agreeable entertainment of the public the place owes much. The only fear now to be entertained for Vichy is that in its magnificent growth and appointments the temptations to indulgence in luxurious habits will soon become so great as seriously to interfere with that simple and abstemious *régime* so important to the invalid passing through a course of mineral waters. In so far as splendid hotels, rich and costly reading-rooms, ball-rooms, and resorts for all kinds of pleasure-seekers are concerned, the visitor may enjoy here, during the season, almost a Parisian life.

The waters of all the springs are clear, gaseous, and of a piquant yet not disagreeable taste; their temperature ranges from 60° to 90° Fahrenheit, the latter registering the degree of heat of the Grand

Grille. The colder springs are those generally used for drinking-purposes; their waters are taken at an early hour in the morning and upon an empty stomach, the quantity being from one to three or four glasses: most persons will not bear more than this at a time. In all other respects the prescriptions relating to their internal use differ but little from those that apply to mineral waters generally. There is here bathing-accommodation enough for three thousand baths per day, yet in the height of the season this provision will scarcely supply the numerous demands for the bath.

Without entering further upon a description of the place and its various establishments for the internal and external use of its waters, I shall here merely mention some of the maladies for the cure of which they are chiefly used; and first amongst these are diseases of the kidneys and bladder.

What is popularly known as red gravel consists of small calcareous deposits of a brick-dust color; these sedimentary particles are largely composed of uric acid, and indicate a predominance of this acid in the urine. The presence in the bladder of these uric-acid particles is usually attended by great irritability of that organ, characterized chiefly by a painful disposition to frequent urination, and often intense suffering in the act. These symptoms, continuing for any considerable length of

time, produce a nervous depression and general prostration of the most distressing character, especially in delicate constitutions.

For this condition a short course of the internal use of these waters, with a daily bath, almost invariably affords relief; this result is doubtless accomplished by the uric acid combining with the soda of the water taken, forming urate of soda, which is expelled from the bladder with the common depurient current. I have no faith in the dissolving powers of these waters upon any well-solidified stone of any considerable size, but for the disintegration of these sedimentary particles they rarely fail. It must not be forgotten, however, that this suffering and painful irritability of the bladder may, and often does, depend upon a very different condition and requires a very different treatment. When a patient is thus afflicted, and the sedimentary particles in his urine are white or light-colored instead of red, they are usually of an alkaline character and cannot be successfully treated by these alkaline waters. Many persons, it is to be feared, have resorted to these springs for relief from this kind of suffering without making this proper discrimination, and have gone away not only unrelieved, but decidedly worse for their experiment.

Vichy has also been recommended for chronic catarrh of the bladder, but it is doubtful whether

such cases would not be better treated elsewhere, particularly if there is present an alkaline condition of the urine. For acute cystic or renal inflammation, attended with purulent discharge, the graver chronic forms of renal disease, involving structural change, I consider these waters decidedly injurious. But there is good reason to suppose that organic change in these important organs often results from the retention of noxious secretions in the meshes of their vascular system, as a result of imperfect functional action, which has been produced by an excess of scavenger labor, thrown upon them by the suppression or derangement of the functions of the skin. In so far, then, as the external and internal use of these waters tends to restore the dermoid functions and stimulate to quickened action the circulation in the kidneys, they may prove useful agents in warding off organic disease; but great care should be taken in ascertaining the non-existence of structural lesion, otherwise they may do great harm.

The waters, taken internally and applied in the form of the bath, usually quicken the circulation of the abdominal viscera as well as that of the skin, and in this manner excite to depurient activity both skin and liver, thus producing a most beneficial effect upon functional disorders of this latter organ. There are also certain forms of dyspepsia for which Vichy is reputed to be of great service, but in

that atonic form of dyspepsia characterized by excessive nervous irritability of the stomach, reflected as it often is upon the brain and reflex system of nerves, the internal use of these waters will often only aggravate the disease.

BAGNÈRES DE BIGORRE.

After Vichy, probably no bath-town in France enjoys so extensive a reputation, or is frequented by so large and promiscuous a crowd of invalids, as this one. Situated in the valley of the Adour, amongst the outlying spurs of the Pyrenees, and surrounded on every hand by charming mountain-scenery, its natural beauties, added to the fame of its waters, bring up annually from the towns and cities, not only of France, but of the entire Continent, a great concourse of visitors seeking relief from impaired health. It is directly accessible by rail, and can be reached in about nineteen hours from Bordeaux—I believe, without change of cars.

There is an immense supply of mineral waters, issuing from about thirty springs, in the place and its immediate vicinity. Their temperatures range from 20° to 60° Fahrenheit. They all differ more or less in chemical qualities; the larger number of them, however, contain as their chief constituent sulphates of lime and the carbonates of magnesia,

with traces of arsenic. Three or four of them are located on the higher ground of the place, and contain very considerable portions of carbonate of iron. Quite a number of the springs of this place belong to the municipal corporation, and yield a very considerable revenue.

The town authorities have built on an elevated site, and in close proximity to the springs which supply it, a splendid marble bath-house, in which the most complete arrangements are made for every imaginable kind of bath. In the basement of this building there is a sort of *burette*, where the iron and arsenical waters of the two springs La Reine and Le Dauphin are taken internally at an early hour in the morning. In the interior there are bath-cabinets with currents of water fresh from the spring passing constantly through them; also Russian, vapor, shower, and other forms of hydropathic baths, and mechanical appliances so arranged as to bring these thermal waters into every kind of contact with the body.

About the middle of the chief promenade of the town there is a spring called Source d'Angoulême—a clear and cool spring said to be highly ferruginous, and to the waters of which much importance is attached in cases of debility.

As at most other bath-towns boasting a variety of springs, the various waters of this place have had assigned to them—with what merit I do not

pretend to say—a great variety of specific qualities and virtues. For instance, the Foubon and Salut, having no iron in them, are said to be sedative in their effects, and are usually prescribed for neuralgia, rheumatism, palpitation of the heart, and nervous excitability generally; the temperature of these two springs admirably adapts them to the bath without artificial modifications, and hence, for this purpose, they are very popular. The Salut is most frequently used for drinking-purposes, and it is said in this form to allay erethism of the mucous coat of the stomach, and to impart strength and tone to it. There is also a spring here called the Lasserre, the water of which, when taken in the quantity of three or four glasses on an empty stomach in the morning, produces quite active purgation, and hence it is much used in cases of engorged liver, with torpor of the bowels, in persons of full habit.

This place may be said to possess no distinctive character as a bath-town; for such is the variety of its waters, and such the variety of virtues ascribed to them, that it has long been a kind of cosmopolitan resort for sufferers from almost every description of malady. It is here, however, that chiefly come, during the summer months, that class of persons who have no fixed or strongly-marked disease, but whose general health has suffered from over-taxation of vital force in legitimate profes-

sional duties, reckless speculations, gambling in stock, or in some other form of exhaustive mental effort. Happily for the sufferers from the various forms of painful functional disorders that these influences entail, the great variety of springs here enables each to choose that one the reputed influence of which he conceives best adapted to his case ; and whether it does possess its reputed virtues or not, it at least affords him an object to inspire his hope and encourage his faith, and under this influence he drinks, and often gets well ; which is the great desideratum for him.

The ample and fine provision made here in the way of good hotels and comfortable living, in connection with the pure air, interesting walks, and drives that may be enjoyed in the immediate environs, doubtless adds much to its virtues as a summer sanitarium ; and for the relief of a vast majority of patients on whom the summer heats and the cares of business or anxiety of domestic life are exerting a pernicious influence, I am inclined to believe it has scarcely a superior in France.

SAINT SAUVEUR.

Perched upon a picturesque cliff, and hidden away amongst the mountains of the high Pyrenees, this little bath-station deserves more than a passing no-

tice. It is now regarded, probably more than any other of the Continent, as peculiarly a "ladies' bath."

Though situated high up amongst the rugged and wild scenery of these mountains, it is annually visited by a large number of women longing for the functions of maternity, of which they deem local or general bad health has deprived them; and it must be confessed that many of the pilgrims to this shrine have returned to their homes amply rewarded for their sacrifice by a restored fecundity.

The single spring that here supplies the water so much coveted issues from the rock facing the establishment, and has a temperature varying from 80° to 100° Fahrenheit; its water is clear and sparkling, yet both to the taste and touch has an unctuous feel. Its chief chemical constituent, so far as its analysis has determined, is sulphuret of sodium; but there can be little doubt that the peculiar taste and touch imparted by it depends upon some occult principles yet undiscovered by the chemical tests to which it has been subjected. A handsome bathing-house ornamented with Corinthian columns faces the deep gorge below, and from it a splendid view of the wild and savage scenery of the cliffs and valleys beneath may be had. There is also quite a number of bathing-cabinets upon the surrounding terrace, and several specially arranged for the ascending douche, upon the virtues of which

so much stress is laid (and not unjustly) in the treatment of many forms of uterine disorders. The daily warm bath to the general surface and the application of this ascending douche to the genitalia, when judiciously used, do often work wonders in removing long-standing cases of exhaustive leucorrhœa, and in resolving chronic indurations of the os uteri and morbid conditions of the vaginal membrane. The local application of this water would seem to act not only as a local discutent, but at the same time to impart tone to the whole genital system. Many cases of prolapsus depending upon a relaxed and feeble condition of the uterine ligaments are annually cured here, and the pessaries and other kinds of mechanical supports worn by their victims left behind are silent witnesses to the efficacy of the waters of Saint Sauveur in such cases.

Saint Sauveur is almost equally celebrated for the cure of neuralgia, and especially that form known as facial; and when this painful disorder depends upon an impaired digestion, accompanied by torpor of the bowels and deranged biliary functions, as it often does, I can conceive that much good may be reasonably expected to follow the use of its waters when internally and externally administered, but where this painful disease exists as an heritage of simple general debility and exhausted vital force, to the use of the waters must be superadded more directly tonic measures.

As the place is almost three thousand feet above the sea-level, its cool, bracing summer air alone must necessarily exert a general tonic influence upon the system; and where women not only suffer from local uterine disorder, but also from this painful form of neuralgia, it will be well to fortify the general system by a good generous diet and moderate exercise in the free mountain-air for a considerable time before commencing the special local treatment.

Catarrhal affections of the bladder and urinary passages are frequently successfully treated here also, but in such cases the internal use of the waters is even more important than the bath.

Such, in brief, is Saint Sauveur—a typical little bath-place of modest pretensions in the variety of diseases for which its waters are recommended, but of great value to the invalid who discriminately selects and uses them. The place may be reached by rail from Bordeaux to Pierrefitte, and thence by carriage, in six hours, over a good but wild and picturesque mountain-road.

URIAGE.

This little town is situated in a valley in the midst of the picturesque department of Isère, a short distance from Grenoble.

The place is only known for its mineral waters, of which there are but two springs. One of these is ferruginous, but enjoys no considerable reputation as such; the other is quite celebrated, particularly amongst the French, for its efficacy in the treatment of certain forms of cachectic disease: its waters have a temperature of about 79° Fahrenheit. Chloride of sodium constitutes their chief mineral constituent, but they also contain a very considerable quantity of the sulphates of soda, potash, and magnesia; they are likewise said to contain quite a large quantity of hydrosulphuric acid. Taken internally, their effects depend very much upon the quantity; taken in small doses, they are excitant and quicken the action of the circulation in rather a remarkable degree, but in larger doses—say from four to six glasses—they are actively purgative, with the peculiarity of producing neither tenesmus nor griping, hence they are admirably well adapted to this purpose where great sensibility of the intestinal canal exists and drastic purgation is not desirable.

In the form of the bath they exert a marked influence on the vessels of the surface, and are much used where local alteratives are indicated. They are greatly extolled for their efficacy in the treatment of diseases of the glandular and lymphatic systems, anæmia, and other forms of debility resulting from imperfectly-developed or sup-

pressed uterine functions in young girls, and for restoring these functions in mature women when deranged by impaired general health or local congestion. Indeed, I think that for all cases where a combined tonic and alterative treatment is indicated this spring possesses peculiar virtues.

As the place is especially appropriated to invalids and great rigor enforced in the *régime* of the patient, it is not at all strange that many go away from this quiet little spot extolling its merits. Much of the benefit here derived doubtless depends on the daily life of the patient, the fine, fresh, bracing air, and the beautiful surroundings of the place, as these, in all such cases, constitute important adjuvants to mineral waters in the treatment of disease.

For both old and young who have become *blasé* with the excitements of fashionable life, and whose general health has suffered from any of the forms of dissipation incident thereto, I can confidently recommend this place; but they must be content to eschew for a while artificial life and submit themselves heroically to the action of the waters and the other influences of Nature around them, however uncongenial they may prove to former tastes.

ROYAT.

In addition to its mineral springs, Royat has much of which to boast as a summer sanitarium. Situated in the centre of France, in a most charming valley, and on the banks of a bright and sparkling little river whose waters come tumbling down from historic heights, it may well be regarded as one of the most attractive little bath-towns of the Continent. It is about fifteen minutes from the town of Clermont, on the road from Paris to Marseilles, and is consequently easy of access to even the most feeble of invalids.

The principal spring of the place, and the one to which it owes its reputation, projects its waters to the surface with a kind of rushing, tumultuous force, as though some huge subterranean hydraulic machine were forcing them from the depths below. In temperature they are about 85° Fahrenheit, and contain as their chief chemical constituents the carbonates of soda and magnesia, with small quantities of iron and arsenic. They are used both for drinking and the bath, but especially for the latter purpose. Many of the bathing-cabinets are so constructed that a constant stream of fresh water direct from the spring may be made to pass through them whilst the patient is immersed in the bath. Every form of douche-, shower-, and plunge-bath, after the most improved mode, may be here en-

joyed, nor has anything been neglected to make this a model place for the material comfort of invalid strangers.

The waters belong to the alkaline class, and are resorted to for much the same sort of maladies as those of Ems, in Germany. They consequently embrace in this category catarrhs of the stomach, chronic inflammation of the bronchial tubes, incipient phthisis, and laryngeal affections. They are also recommended for chronic inflammation of the bladder and urinary passages, leucorrhœa depending upon a passive chronic congestion of the uterine system, and are much extolled for the removal of sterility; and there can be little doubt that when this condition in any way depends upon a relaxed and passively congested state of the uterus, their application to the general surface and special direction to the genitalia often do prove of great service in accomplishing that end.

Gout, rheumatism, paralysis, neuralgia, and other kindred affections, as at almost every other thermal spring, are claimed to be successfully treated here, and many such cases have doubtless here been relieved, but in many others no benefit whatever has been derived from the trial.

Royat, however, does possess many advantages over some of the springs of a kindred character on the Continent in the fact that its air is better and the surroundings more cheerful and interesting. In

addition to the charming natural scenery environing the place, it has historic associations of an interesting character. On the neighboring heights of Gergovia once stood the celebrated old fortress against which the legions of Cæsar hurled their force in vain after he had passed the Rubicon and entered Gaul. In the vicinity may yet be traced the remains of the celebrated château of the duke of Aquitaine, which Pepin besieged and burnt in 786. Indeed, almost every hill and valley of this locality is marked as the scene of some historical event of interest which the invalid, whose curriculum of cure requires him to go through a thorough saturation of the waters, may daily visit.

Such excursions amongst the charming hills and valleys of this interesting country cannot fail to act as a powerful adjuvant in the promotion of his cure. Hence, from this combination of influences, it is not strange that yearly there go away from this place a goodly number of restored patients grateful for the benefit they have here derived, and ready to extol the virtues of Royat to their suffering friends.

ISCHIA.

The territorial limits of Italy embrace within them many mineral springs, some of which have been popular resorts of invalids since the time of

the ancient Romans, but as they resemble so nearly, in their physical qualities and reputed virtues, so many of the more northern springs of which I have already spoken, I shall not here attempt either an enumeration or a description of them.

The invalid reader, in perusing these pages, has doubtless already been impressed with the similar character of the mineral agents all the springs described contain, as well as with the almost uniform category of diseases for the cure of which they are recommended, and I must confess that these facts have so impressed me in my investigation and study of these sanatoria that to enter further into descriptive detail of them would prove not only an uninteresting task for me, but also an unprofitable one to the reader. There is one spot, however, in Italy abounding in mineral springs and possessing so many other qualities adapting it to the purposes of a sanitarium that I cannot consent to pass it over without at least a brief description and analytical notice of its merits.

About an hour and a quarter by steam from Naples, standing out in the north-west corner of its beautiful bay, may be seen from the shore the picturesque island of Ischia. Probably in no portion of the world can there be found so favorable a combination of natural elements of a sanitarium for promiscuous invalidism as at this little spot. Warmed by a genial sun and bathed at all seasons

of the year by the cerulean waters of the surrounding sea, this island possesses a climate peculiarly mild, and at the same time tonic and invigorating. Such, too, is the topographical conformation of its surface that at any given season of the year the climatic influences there to be enjoyed may be more or less varied by a simple change of location from one portion of the island to another.

Although but a short distance from the mainland, its vegetation indicates a much more southern latitude than that of Naples, whilst the fruits and flowers of the more sheltered localities are almost tropical. Grapes, oranges, lemons, figs, peaches, apricots, and melons of all varieties flourish here in great abundance and of the finest quality.

But it is in the character and distribution of its thermal springs and the *ensemble* of its hygienic influences that Ischia justly lays claim to the consideration of the invalid public. Issuing from some heated region beneath the narrow limits of this island, there are no less than fourteen thermal springs, ranging in temperature from 75° to 180° Fahrenheit; they all contain as their chief solid constituent chloride of sodium, but most of them hold, in addition, the carbonates and sulphates of soda. These springs, like many others of their kind, from some real or imaginary specific quality, have been classified with reference to corresponding forms of disease for the treatment of which they are said

to be efficacious. One of them, like the spring of Schlangenbad, in Nassau, is said to possess the quality of rendering the skin smooth, soft, pliable, and fair; hence it is usually resorted to by ladies ambitious of a fair complexion: for this purpose its waters are used only in the form of the bath. Another, the Caponi, like the Kochbrunnen of Wiesbaden, has a taste somewhat resembling weak chicken-broth, and is taken internally for stomachic affections, particularly for cases of weak and painful digestion attended by flatulence and acid secretions. From the fact that the waters of this spring are mild and simply aperient in their action upon the bowels, they are admirably adapted to weak persons of great nervous susceptibility, who, in addition to stomachic derangement, suffer from constipated habit, but who cannot tolerate active purgation. They are often of great service also in relieving cases of gastralgic or other distressing pains of the stomach, resulting, as such often do, from mere atony of its coats and an undue secretion of acid.

Like Ems, Ischia has also its Bubenquelle, or maternity spring, from which, it is claimed, if the patient drinks, and at the same time diligently uses the bath in its prescribed form, she may reasonably expect a restoration of the faculty of fecundity if from either general bad health or local uterine derangement this power has been lost. Of course, where any congenital or organic condition exists

precluding the possibility of this much-desired faculty, it would be folly to expect from these or any other waters this result. That the use of the waters of this spring, in the manner above indicated, does in some way contribute to establish or restore this lost function many living witnesses are willing to attest; hence it is regarded as emphatically the ladies' spring of Ischia, full of hope for those who long for the maternal offices.

From the fact that there are, as already said, fourteen of these springs on this little island, differing slightly in chemical constituents and materially in temperature, it may be inferred that many varieties of diseases are claimed to be successfully treated here; and such is indeed the case.

Persons laboring under various forms of diseased liver, spleen, and other abdominal viscera, as well as sufferers from gout, rheumatism, and neuralgia, may be seen here using the steaming waters supposed to be most applicable to their cases; whilst strumous patients and others suffering from some of the various forms of cachectic disease are also found here annually trying their efficacy. A large proportion, however, of the invalid crowd seeking health at this place are simply sufferers from debility or general functional derangement; and, without attaching an undue importance to the specific agency of any of the springs here found, I cannot too heartily recommend this latter class

of sufferers to this delightful spot, for it certainly does possess, in the variety and combination of its hygienic influences, advantages superior to many of the other sanatoria of Europe.

Unlike Madeira, situated in the Atlantic Ocean, remote from the mainland, and involving a fatiguing journey to reach it, Ischia lies in the bosom of the waters of this beautiful bay, in full view of the mainland and, on a clear day, of a gay and populous city. It possesses a mild and genial climate, good hotels and *pensions*, but, above all, splendid sea-views and in many places gently-sloping shores, admirably adapting it to sea-bathing, which, in connection with its thermal springs, gives it a kind of cosmopolitan character for the treatment of disease. The mineral springs found elsewhere upon the Continent are, as a rule, located in deep valleys or mountain-gorges, often difficult of access, not unfrequently surrounded by the sterner aspects of Nature, and in almost every instance away from the sea, so that at none of them can the combined agencies of thermal mineral waters, sea-air and bathing be made available to the invalid at the same time; but on this island all may be enjoyed without serious inconvenience to the most feeble in health.

Issuing from this thermal bath or after his morning portion of prescribed waters, the invalid may refresh his frame with little or no effort by inhaling the sea-breeze as it comes bounding over the

blue waters of the bay ; or if, with the internal use of the waters, his constitution requires more toning up, he may plunge at will into the sea and receive upon his relaxed frame the tonic shocks of surf and wave as they come rolling up upon these sloping shores. If he should grow weary of the island or deem its life too monotonous, the blue waves everywhere around him invite to some new essay with sail or oar ; whilst near at hand, upon the neighboring mainland shore, a great historic world and a gay and populous city stand ever ready to contribute their quota in ministering to his æsthetic nature ; and this, as my readers have doubtless already learned, I regard as no mean factor in working out the cure of almost any disease.

Such is Ischia ; and, without attempting to indicate the particular classes of invalids for which its resources are best adapted, I will merely here mention that its thermal waters may be regarded as an epitomized collection of what are to be found in the different springs distributed elsewhere over the Continent, and that in its sea-air and its sea-bathing, with the æsthetic elements of cure here to be enjoyed, so far as I am able to judge, it ought to be considered as possessing the highest possible qualities implied in a sanitarium for promiscuous invalidism. Nor should any curable invalid, however much disappointed at other places, despair of relief until he has given this one an effectual trial.



